

A PRACTICAL TREATISE
ON THE MOST COMMON
DISEASES OF THE SOUTH:

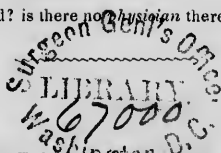
EXHIBITING
THEIR PECULIAR NATURE,
AND THE
CORRESPONDING ADAPTATION OF TREATMENT.

TO WHICH IS ADDED
AN APPENDIX,
CONTAINING SOME MISCELLANEOUS MATTER.

ALSO
A GLOSSARY,
EXPLAINING THE MEANING OF THE TECHNICALITIES, OR MEDICAL
PHRASES, USED IN THIS WORK.

BY THOMPSON MCGOWN, M.D.,
GRADUATE OF TRANSYLVANIA UNIVERSITY, MEMBER OF THE LEXINGTON MEDICAL
SOCIETY, AND A PRACTITIONER OF THE SOUTH.

~~~~~  
"Is there no balm in Gilead? is there no physician there?" Why, then, may not all  
be healed, or profited?



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## P R E F A C E.

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FROM the desire that has very frequently been expressed by many of the best southern practitioners, and also from my own practical experience and observation, I have, for some time, been convinced of the great necessity that existed for a medical work that should serve as a book of reference and instruction in relation to the peculiarities and proper treatment of Southern Diseases.

Our medical books having been written almost entirely by European and northern authors—however useful they may have generally been—are not adapted, as experience has amply proved, to the diseases of the South.\* Impelled by these considerations, I have in this work endeavored to supply, in part, this desideratum. The book has not, however, been prepared with that care and leisure that I could have desired; but, nevertheless, I have endeavored to express myself concisely and intelligibly; although, in some instances, I have intentionally avoided brevity, in order to be the better understood by the general reader; though, by this course, I may have violated

\* Dr. Cartwright, of Natchez, Mississippi, says, the best works extant on *Diseases of the South*, are those of Hippocrates, the father of medicine.

some of the established rules of composition. Some errors may also have crept into the work.

In connection with my own practical experience and observation, I have availed myself of the experience of some of the most erudite southern practitioners, most of whose names will be found in the work. Reference is also occasionally made to foreign or northern authors, in instances where such reference is pertinent.

The author feels confident that this work will be of great value to students of medicine, young, and even old practitioners, and those who have recently emigrated to the south or southwest, and the southern and southwestern people generally.

I believe that the medical as well as the legal profession is in error in using *technicalities*, especially where they can be conveniently avoided, and more particularly in practical works, in which, as far as possible, they should be supplanted by plain English words, in order that all persons who are disposed to inform themselves, to some extent, on the subject of medicine, may do it with comparative ease; though it should be recollected that technicalities cannot be entirely dispensed with, at least at present. My experience is, that nothing human is more certain than that the more the public are instructed in eclectic or philosophic medicine, the better are they prepared to appreciate it; they thus learn the importance of obtaining the services of a qualified physician, in case they or their families or friends should be so unfortunate as to be afflicted to a degree which their

own knowledge is not competent to control ; and they are also thus rendered more competent to judge of the qualifications of a practitioner, and not so easily imposed on by mountebanks, or by every new or foolish notion that is gotten up to gull the public for a time, from mere pecuniary considerations. It appears, on the one hand, that the human mind has a great proclivity to deal in that in which it can see some reason or plausibility, or which it pretty well comprehends; or, on the other, that, in relation to which it is totally ignorant, and for which it can perceive no reason, but which, nevertheless, commands its superstitious credulity. Hence, from remote ages to the present day, charms and ceremonies—which common sense teaches us can have no influence, except on or through the mind—have been used for the cure of diseases. In the onward and upward march of the human mind, as intelligence becomes more general, we may hope, at least in a great measure, to see these superstitious notions banished from the world. In order, then, that the *regular practice*, that *eclectic* or *philosophic medicine*—the principal foundation of which appears to have been laid between twenty-two and twenty-three hundred years ago, by Hippocrates, who is commonly called “The Father of Medicine”—should be properly appreciated or confided in by the public, every disciple of Esculapius, every member of the regular profession, should take an interest in attracting the public more to the subject of rational medicine, and communicate information as opportunity may offer.

The author has, therefore, in order that the public may be benefited, as well as his professional brethren, endeavored to adapt his composition to the general reader. Having been compelled, however, to use some technicalities, a glossary is added to explain their meaning. There is one objection to instructing some non-professional persons on the subject of medicine, and this is, that they become bigoted, and profess to know as much as physicians, and are thereby emboldened to practice, at the risk of the patient's life, when a physician should be called in.

It is somewhat remarkable that so little attention is paid in our common schools and academies to the outlines of anatomy, physiology, and the general principles of medicine. It is not expected that all persons will be *learned* in medicine, but surely these subjects are of such importance to every one, that they should not be so ignorant of them. Of late years, I believe, there seems to be more interest felt in this matter, and, ere long, we may hope to see it more extensively introduced into the schools of general literature.

I had thought of writing an introductory chapter to this work, on the General Principles of Medicine, having some original peculiar views, which I consider founded in the laws of truth, and which, when understood, enable us to reconcile apparent inconsistencies, and various opinions of eminent medical men, and are also well calculated, to a considerable extent, to prevent physicians from being led into error by the sophistry of their imaginations, and

which also greatly simplify the subject of medicine, so that an intelligent public may, in a great measure, comprehend it, and perceive its rationality. But as a proper delineation of this subject would require a volume (which I have not had time to prepare), I have omitted it, having endeavored to teach *principles* as well as *practice* in this work; and if it is sufficiently patronized and the author encouraged, he may, in the future, provided opportunity permits, prepare a work on the general principles of medicine, and perhaps, also, a more comprehensive edition of this work.

In the following pages, I have endeavored to be guided by the light of truth; and though I may have freely alluded to the errors of some of my professional brethren, it is not because I love them less, but that I love truth and humanity more; and, as has been said by some writer, though I should cast missiles at the spots on the sun, it is no evidence that I despise the brightness of its disc.

Hoping and believing that my professional brethren, and the public, may be amply rewarded by carefully consulting this work, it is most respectfully submitted to them.

THOMPSON MCGOWN, M. D.

*August, 1849.*



## TESTIMONIALS.

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*Philadelphia, Penn., July, 1849.*

Whilst this work was passing through the press, I received a letter from a friend in the South, who advised me to have *testimonials*, in order that those with whom I am not acquainted may be assured of the merits of this book, and therefore seek an early opportunity to obtain it. This I had not thought of doing, expecting it to make its way on its own merits, if it has any; it is clear, however, that these cannot be appreciated till the work is perused. And, therefore, not having prepared myself with testimonials for this purpose, and it now being too late—as the work will soon be out of press—in deference to the suggestion of my friend, I will here insert some communications (which I happen to have in my trunk) that were handed to me on other occasions and for other purposes; and I hope the gentlemen whose names appear below will excuse me for this liberty.

---

The following were kindly handed to me, when I was about leaving Mississippi to locate in North Alabama.

*Hillsboro', Scott County, Mississippi, July 19th, 1848.*

*To all whom it may concern.*

The undersigned having learned that their highly respected friend, T. McGown, M.D., is going to leave this place, and as he may locate where he is not known, we voluntarily take great pleasure in recommending him as a gentleman of moral habits, probity, mild and courteous, worthy of the confidence and esteem of all those who respect morality, virtue, and honesty. He located here in 1844, and has proven himself to be a talented and skillful physician; he has practiced in all our families, and we have been highly pleased with his success. He is a pleasant and agreeable friend, and we very much regret his leaving here, and hope that, wherever he may locate, his merits may be duly appreciated.      \*      \*      \*      \*      \*

J. M. CHAMBERS, *Minister of the  
Gospel in the Baptist Church.*

J. J. SMITH, Esq.

J. J. CHAMBERS, *Ex-clerk, Circuit  
Court of Scott County, Miss.*

FROM REV. J. D. ABNEY.

*Carthage, Miss., May 29th, 1848.*

*Elder J. M. CHAMBERS, Hillsboro', Miss.*

*Dear brother in the Lord:* I am now on my way home from my appointment in Madison County. \* \* \* \* \* I did intend to call at Hillsboro', in order to spend some time with our friend Dr. McGown previous to his leaving, but my business presses me on home by the shortest route. Give the doctor my best wishes \* \* \* \* \*. My acquaintance with the doctor has been truly intimate and of the most pleasant character, and I hope you will have the goodness to hand him this; and I hope that his modesty will not prevent him from using it on any proper occasion; for I can, with the greatest pleasure, say to the afflicted, that he is a man who stands pre-eminently high as a knowing and attentive physician; and to the good citizens of any community, I can, with pleasure say, that he is, as his deportment fully shows him to be, a faithful friend and gentleman; and I earnestly hope that he may find a situation that will be able to appreciate his high attainments, and his moral worth.

I am yours in love,

J. D. ABNEY.

*Hillsboro', Mississippi, July 20th, 1848.*

GENTLEMEN:—

This will introduce you to Dr. THOMPSON MCGOWN. \* \* \* \* \* I have enjoyed the pleasure of an intimate acquaintance with Dr. McGown for near three years, and I take pleasure in saying, that his exemplary conduct as a gentleman, and his success as a practitioner, have made him more friends, wrought a confidence in his abilities, and gained him a reputation that is seldom the fortune of one of his age to attain.

I risk nothing in saying, that you only have to become acquainted with Dr. McGown, to admire him as a gentleman, and appreciate his abilities as a physician.

Respectfully,

D. R. JONES, *Sheriff of  
Scott County, Miss.*

*Hillsboro', Miss., July 14th, 1848.*

*To all whom it may concern.*

Some four years since, I became acquainted with Thompson McGown, M. D., at this place; during the past three years it has been my pleasure to cultivate with him an intimate and sociable intercourse, both in private and professional life; occasionally requiring his professional attention as a physician.

In my intercourse with him, which has been of the most intimate character, I have found him to possess those rare qualities so necessary to the character of a gentleman. \* \* \* \* \*

His professional ability in this vicinity has been thoroughly tested in numerous cases, nearly all of whom now live to award him the just meed of praise, which well-directed skill, timely administered, claims from the hands of a grateful circle of friends.

E. RUSH BUCKNOR, *Attorney at Law,*  
*Hillsboro', Miss.*

---

The three following brief extracts are from the undersigned, to gentlemen whose names appear, the letters never yet having been handed to them.

*Neshoba County, Miss., April 15th, 1849.*

J. B. KIRTLAND, Esq., *Memphis, Tennessee.*

DEAR SIR:—

Please permit me to introduce to your acquaintance my friend Dr. McGown, who visits your town for the purpose of locating \* \* \* The Dr. has for some time past been engaged in preparing a medical work for publication. I take great pleasure in saying to you, that the Dr. is a gentleman of high standing, both as a citizen and a practitioner of medicine,  
\* \* \* \* \*

Yours Respectfully,

H. M. WALSH.

The other two extracts I thought of making, are in substance as the above; one of them addressed to Dr. Lard of Tippah County, Miss., and the other to Messrs. Wisdom & Walsh, Purdy, Tenn.

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Erasmus S. Broyles, M. D., of Aberdeen, Miss., in a letter to me under date of April 19th, 1849, after learning that I was about to publish this work, says: "It will afford me pleasure to patronize your work when it makes its advent to this place."

The Editor of the SOUTHERN PATRIOT, a newspaper published at Athens, Alabama, after examining a portion of the manuscript of the work, gave it a highly complimentary notice in his paper.

In conclusion, I will remark, that a number of physicians, and others, have already subscribed or spoken for a copy of the work in advance, in anticipation of its publication.



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9

# A PRACTICAL TREATISE

## ON

# DISEASES OF THE SOUTH.

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### CHAPTER I.

#### MALARIOUS\* DISEASES.

THE almost universal malarious influence in the southern and western portions of the United States, as well as many other portions of the globe, undoubtedly renders this subject one of the most interesting which pertains to the practice of medicine. This is a subject which does not only interest physicians, but all those who reside in those portions of the world where this malarious influence is felt.

A committee (Prof. Bartlett being one of the number) appointed by the *Lexington Medical Society* in 1847, remarked: "Extensively as malarious fever has been written about, there are many points of its natural history which need further elucidation. Amongst these may be mentioned, particularly, the following: the comparative liability of the sexes, of the black and white races, and of different periods of life, to the several forms of the disease; the influence of race upon its severity and danger; the relative proportions, in different years and locali-

\*I use this term for the sake of convenience, and to be understood, without assuming to prove or disprove the existence of such a thing as *malaria*, or *miasm*, according to what is generally understood by these terms.

ties, of the three principal forms—intermittent, remittent, and congestive; the most common type of the pure intermittent form; and the variations in the general character of the disease, in different seasons.”

A southern and malarious region having been the place of my nativity, and having had considerable practical experience in the various forms of disease produced or modified by malarious influence; and, moreover, having taken pains to acquire what information I could on the subject, from southern practitioners and others, and from books and medical journals, I am induced to believe that the condensation of this summary may convey to those who feel interested enough to read this work, some information that may not be without interest and profit, especially to those who expect to practice in the South or West; and I am the more inclined to prepare it, from not only observing the improper and deleterious practice of many physicians who have been educated at the North, but from the common observation of many of my professional brethren of the South, and also by many of the non-professional. Indeed, it is remarked by many of the older practitioners of this country, who came here from the North, that they, and others who had been educated at the North, and subsequently located in the South, had to learn to treat the diseases of this country after they came here. I feel assured that very few, if any, of the northern teachers and writers sufficiently appreciate the peculiarities of not only the malarious fevers, but of many other forms of disease which are modified by this climate and locality, and requiring a corresponding adaptation of treatment. It gives me pleasure, however, to observe that some of the teachers at the North are not so fully obnoxious to these remarks at present, as heretofore. It appears that some of them, at least, are taking more pains than formerly, to make themselves acquainted with the

diseases of the South; and I am the more gratified at this increased manifestation of interest, because I believe the abuses in practice in the South will be but tardily ameliorated till the northern professors and writers are prepared to give students from the South the requisite and proper instructions in these respects;—as from other advantages, the competency of northern teachers in other respects, and the reputation of northern schools, a great many students in the South will perhaps continue to go to the North to acquire medical information. A large number of southern physicians are still too much inclined to look at the diseases of this country through northern spectacles. I would that the observation of the late Dr. Eberle was more universally true, that “The American practitioner, free from the trammels of systems, and the dogmas of the schools, pays no further regard to the *verba magistri* than is sanctioned by his own experience and observations. He inquires, observes, and reflects for himself, and adopts the mode of treatment which he finds, from varied experience, most successful. A practice, which has received the approbation of a numerous portion of the profession, may be confidently regarded as founded on individual experience and observation, and not adopted on mere authority, and entitled, therefore, to full confidence.” As regards southern diseases, these remarks apply appropriately to many southern practitioners, especially the better informed ones, on the subject of southern diseases. Ere long, I hope to see northern teachers, as well as southern ones, and medical writers generally, pay more attention to this subject; as I feel well assured that the profession would be amply rewarded for such attention, by additional trophies in the healing art, as well by removing some of the opprobria from an honorable and useful profession, and one which is essentially necessary, not only in relieving the sufferings and

diseases of the human family, but as a guardian, in pointing out the principles of hygiene, and those means of prophylaxis which are best calculated to secure health and comfort, and immunity from disease. But as it is human nature to be tenacious of preconceived opinions, time will be required to eradicate error, and bring about a great desideratum, *a correct and general knowledge of the diseases of the South, and the principles of treatment they demand.* I have not the presumption to suppose that I can remove the veil, and at once appreciate the nature of all these diseases, but, being willing to contribute according to my experience and ability, I hope to receive the approbation of my professional brethren, especially of the South, in this humble,—but I trust, laudable undertaking.

It is not my intention to enter into an analytical examination of the different opinions as to the existence or non-existence of what is termed "*miasm*," "*marsh poison*," "*malaria*," etc. The Italian term *malaria*, which merely means "*bad air*," is not that signification which is commonly attached to the word. Those who believe in the existence of such a poison, are of the opinion that it is *sui generis*, and produces its peculiar influence on the system, which differs from everything else. There are others who do not acknowledge the existence of this hypothetical poison, but believe that the morbid influences attributed to it are produced by variations of temperature, heat and moisture, etc. etc.

A retrospective view of the history and prevalence of the different forms of malarious disease in different localities, would be a task impossible, and if possible almost *ad infinitum*, and without equivalent profit arising from such a prolix historical detail. Yet it may not be without interest to notice briefly some of the times and places of its prevalence in our own country. Dr. Cartwright,

of Natchez, Mississippi, is of opinion that the different forms of malarious disease were better known by Hippocrates, than any of the medical profession of the present day. I may premise that its prevalence in any year or place, seems to be induced by occult causes—which, as yet, we have been unable to appreciate. In some places, where it is endemic, a certain season may be wet and healthy, or dry and healthy. The late Dr. Eberle observed: “It would seem that either the generation of miasmata, or their power of producing intermitting and remitting fevers, is greatly controlled by certain occult conditions, wholly unconnected with any appreciable circumstances, with regard to atmospheric temperature, or any of the other known requisites for the production of this poison;” and further, correctly remarks: “In certain districts of the temperate latitudes, malarious fevers will sometimes disappear, or become extremely rare for a number of successive years, and then gradually become more and more common, until, in the course of a few seasons, they assume the prevalence of an epidemic; and yet no material difference will be obvious between these periods of exemption from, and prevalence of disease, in relation to what are deemed the necessary concomitants for the production of miasmata.” Professor Dunglison says: “It is proper to remark, that such a change occasionally occurs in a malarious region, as to render it entirely healthy, and this without our being able to assign any plausible conjecture for the alteration. At times, too, after having left one of its former haunts, the malaria may return, after the lapse of a longer or shorter period.” The correctness of these remarks is corroborated by the observation of all those who have for many years noticed its prevalence. Professor Dunglison further observes: “Not many years ago, the villas on the banks of the Delaware were almost uninhabitable in the latter part of

summer, and in the autumnal months, but they are now healthy, whilst those on the verdant and sylvan banks of the Schuylkill suffer from malarious emanations;" and further remarks, that "It is met with in all climates, but less perniciously, perhaps,\* in the colder regions of the globe, than in the torrid or the temperate. In the same region, too, it prevails more virulently in some districts than in others;" the cause of it "sometimes exhibiting itself in the high grounds, whilst the low are exempt; and occasionally visiting tracts of country where it had previously been unknown; whilst, on the other hand, it may leave localities where it had been before an annual visitor." Dr. Boling, of Montgomery, Alabama, says: "The exact combination of circumstances under which that mysterious agent of disease, malaria, is generated, remains yet to be satisfactorily explained, as well as the chemical and physical properties belonging to it. We find at times all the circumstances in existence, so far as we are capable of understanding or appreciating them, which on a previous occasion had been supposed to cause its development, without the presence of malarious disease; and again, we find such diseases prevailing to a considerable extent, when of the generally recognized causes of malaria, but few are present, or, if all, their existence in but a feeble degree."

In certain portions or localities in the southern and western States, where it is more or less common every year in the latter part of the summer, and during autumn, and not unfrequently to a less extent during the entire year, it appears as an endemico-epidemic in the latter

\* Prof. D. might properly have left out the word "perhaps," and also remarked that it does not prevail equally in all regions of the globe. While it is almost unknown or uncommon in the New England States (according to Prof. Bartlett), where typhoid fever mostly prevails, it is the most common form of disease in the south-western portion of this Union.

part of summer and in autumn, at which times it is apt to be more severe; sometimes assuming what has been termed the *pernicious remittent type*, and at others the form of congestive chill. It is said that in 1822, a bad form of bilious remittent fever prevailed at Louisville. I believe it was about the year 1824 or '5, when a very fatal form of fever prevailed about Huntsville, Ala. The usual mode of treatment was of so little avail, that Dr. Thomas Fearn was induced to try large doses of quinine, which proved successful; and it appears that he is the first who used large doses of this article, a practice which has since become very popular in the southern and western States, amongst the most enlightened and successful practitioners. Malarious disease prevailed in some portions of North Alabama, in the summer and autumn of 1827 and '8; especially in the region about Decatur, Moulton, Courtland, and Tuscumbia. Dr. Hogg gives an account of the epidemic fevers of Natchez, Miss., in 1837, '8, and '9; and takes brief notice of the malignant double tertian. Dr. T. D. Bell gives an account of an epidemic congestive fever, attended with dysentery, which prevailed in the flat, low, marshy country near the junction of the Black Warrior and Tombigbee rivers, in Alabama, in the summer of 1829. Malarious fever also prevailed in many places in the South, in 1839 and '40, and with a good deal of intensity or severity. In the latter part of summer and in autumn, in 1840, it appeared as an epidemic in the counties of Franklin, Coffee, Warren, and others in Middle Tennessee; the severer forms being very common; and prevailed to a considerable extent in the same region, and elsewhere, in 1842. In the same season of the year, in 1844, it prevailed in the southern part of Alabama and Mississippi, manifesting its severer forms in those endemic localities where it had formerly more virulently prevailed; the

healthier localities mostly furnishing the milder forms, with perhaps some exceptions. Dr. Charles McCormick, Assistant Surgeon, U. S. Army, made a report at Fort Gamble, Florida, Sept. 1841, of 167 cases of fever; 119 being of the quotidian type, 32 of the tertian, and 16 of the remittent form. Two or three cases assumed the congestive form, and he remarks: "I think the strongest peculiarity of character these cases have presented, this season, has been the strong tendency they have had to run into and assume the remittent type. In fact, in many of the cases, it has been extremely difficult to draw a distinct and plain line of demarkation, to say where the one ended and the other commenced."

Dr. Lewis, of Mobile, Ala., observes, when speaking of what he calls the third epoch in the Medical History of Alabama: "But in 1834, we find its approach (i. e. fever) was insidious and unobserved, giving no serious warning of its proximity, until the unconscious victim was secure in its grasp. The patient first complained of depression, *heat and burning*, when to the touch the surface was icy cold. That cold, that first stage, is now the stage of disease and peril; and that reaction, which in past days was looked to with fear and trembling, would now be hailed as the messenger of returning health and vigor."

Malarious fever appeared as an epidemic in the region of country about Nashville, Tennessee, in 1845. A writer to the editor of the *New Orleans Medical Journal*, under date of Nov. 6th, 1845, says: "Since I wrote you last, we have been dreadfully scourged with disease. Although our town has been healthful as usual, the surrounding counties of Middle Tennessee, and the adjacent counties of Kentucky, have suffered more from sickness than the 'oldest citizen' can remember at any former period. The disease has been principally fever,

and of the ordinary remittent and intermittent types, requiring, as far as I have observed and inquired, no important modification in the treatment. The disease commenced about the middle of September, and continued with unabated violence until about the 25th of October, when it ceased with the approach of cool weather, and very suddenly. I have not been able to ascertain that one locality has been more liable to its ravages than another; the high, hilly, and even mountainous districts, as well as the flat, rich country, have been alike sufferers. And during its severest form, the country was perfectly dry, not having had rain for many months."

The summer season at Woodville, Miss., 1846, was wet, and fevers were mostly of the tertian type. Thermometer from 73° to 93°. The congestive fever appeared as an epidemic at Pensacola, in 1844, for the first time, and again in the summer and autumn of 1846. Dr. T. A. Cooke, of Opelousas, Louisiana, says, according to his experience, which is confirmed by others who have enjoyed a better opportunity than himself for observation, that congestive fever does not bear to our autumnal bilious fevers a ratio greater than two per cent. During eleven years' practice in Opelousas and the adjacent country, he had not observed on an average more than twelve cases a year. At Montgomery, Ala., in 1845, it was dry and very healthy; in 1846, wet and healthy. The sickly season at Columbus, Miss., is mostly confined to August, September, and October; but in 1846, marked cases of bilious fever commenced early in July; and though this sickly season was long, the diseases were mostly mild, and of the remittent and intermittent form, till about the middle of September they became more obstinate; and there were a few cases of congestive fever. The summer was very wet. In the latter part of September, the worm or caterpillar committed great depre-

dations on the cotton, every leaf in the largest farms was eaten up; and the effluvia from the cotton field was sickening, and almost intolerable. Dr. J. B. Wilkinson, of Louisiana (*New Orleans Medical Journal*, July 1845), says: "In the last three years, during the spring, summer, and autumn, I have treated successfully between six and seven hundred cases of intermittent fever, embracing every variety of form, from the simplest grade to those cases where complete stupor and insensibility were co-existent, and succeeded to the cold stage, and those cases in which the paroxysm was ushered in by symptoms and appearances so similar to those indicative of cholera morbus, that, unless acquainted with the history of the case, an observer would have declared them cases of the latter disease." These cases, perhaps, should more properly be considered as the *dysenteric variety of congestive fever*.

John Dawson, M. D., of Jamestown, Ohio, in 1846, says: "The summer and autumnal diseases were more prevalent, so far as my own experience was concerned, than last season, although that was generally regarded as being a sickly season compared with several of the preceding. All parts of the State, if I have been correctly informed, have not been equally affected. Our towns, as a general rule, have been comparatively healthy, while certain country situations have suffered beyond any former precedent. Nor have I been able to trace any connection between the occurrence of certain of our autumnal diseases and particular districts of country. Along the courses of the larger streams of water, the diseases considered peculiar to such localities have not been more frequent, or more severe, than in the vicinity of small streams, or even in the interior." He further remarks: "*Bilious remittent* and *intermittent* have had an almost unexampled prevalence." The bilious form prevailed some in August, more in September, and he thinks

obtained its greatest prevalence in October. The cases in August and September were generally of short duration, and easily controlled with purgatives and quinine. I believe the severer forms of malarious fever prevailed as an endemico-epidemic in some portions of North Mississippi, in the summer and autumn of 1842, and again in 1843; and I believe in the same seasons, and with considerable malignity, in the south-western portion of Alabama.

It is said there is more sickness at Tuscumbia, Ala., this season—autumn of 1848—than has been for many years. The different forms of malarious disease, as is usual in this valley, were the forms of disease that prevailed; some of fatal congestive form. I may here remark, that in the Tennessee river valley, and more particularly on the south side, from Gunter's Landing in North Alabama, to Tuscumbia, including Decatur and Courtland, there is more or less of the three principal forms of malarious fever every summer and autumn; and, indeed, some have ague and fever all winter. Previous to the 10th of September, the quotidian is, perhaps, the most common form; after this, it is apt to assume more or less the tertian, double tertian, irregular, remittent, or what some call the continued form,—perhaps improperly,—and an occasional case of the congestive form.

Perhaps I have already been more tedious than necessary in noticing the *prevalence* of malarious fever in different localities, and at different times. This part of the subject might be extended to almost an indefinite length, as before remarked, without corresponding practical advantage. I will close this part of the subject, therefore, by a few tabular statements and remarks.

*Fever Statistics*, showing the relative proportion of the different forms of malarious and other fevers admitted into the New Orleans Charity Hospital, during a period

of seven years, from 1st January, 1841, to 1st January, 1848, inclusive; monthly and annually. Reported by E. D. Fenner, M. D. Dr. F. says: "This institution is probably the most extensive fever hospital in the world, and affords the greatest facilities for investigating the disease in all its forms and varieties."

| 1841.<br>FEVERS.       | Jan'y. | Feb'y. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|------------------------|--------|--------|--------|--------|------|-------|-------|---------|-------|----------|------|------|--------|
| Intermittent, - - -    | 3      | 27     | 45     | 39     | 28   | 65    | 187   | 151     | 18    | 66       | 93   | 72   | 794    |
| Typhoid, - - -         | 1      |        |        |        |      |       |       |         |       |          | 5    | 6    | 12     |
| Congestive, - - -      | 4      | 3      | 1      |        |      |       | 7     | 3       |       | 3        | 1    | 2    | 24     |
| Remittent, - - -       | 3      | 2      |        | 2      | 9    | 6     | 31    | 31      | 5     | 1        | 7    | 2    | 39     |
| Malignant Intermittent |        |        |        |        |      |       | 3     | 3       |       |          |      |      | 6      |
| Yellow, - - -          |        |        |        |        |      |       |       | 174     | 642   | 252      | 37   | 8    | 1113   |
| Bilious, - - -         |        |        |        |        |      |       |       |         |       |          |      | 3    |        |
|                        | 11     | 32     | 46     | 41     | 37   | 71    | 228   | 362     | 665   | 322      | 143  | 93   | 1991   |

Total admission of all diseases, 4380.

| 1842.<br>FEVERS.    | January. | Feb'y. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|---------------------|----------|--------|--------|--------|------|-------|-------|---------|-------|----------|------|------|--------|
| Intermittent, - - - | 45       | 29     | 35     | 39     | 45   | 124   | 160   | 169     | 144   | 140      | 110  | 61   | 1092   |
| Remittent, - - -    | 4        |        | 1      | 3      | 4    | 8     | 12    | 34      | 41    | 35       | 11   | 3    | 155    |
| Typhoid, - - -      | 9        | 2      |        |        |      | 4     |       |         | 2     | 2        | 2    | 1    | 22     |
| Bilious, - - -      |          |        |        | 2      |      | 3     | 9     | 3       | 1     | 2        | 2    | 1    | 23     |
| Congestive, - - -   | 1        |        | 3      | 3      | 2    |       | 10    | 5       | 4     | 9        | 2    | 1    | 40     |
| Gastric, - - -      |          |        |        |        | 1    | 2     | 6     | 1       |       |          |      | 1    | 11     |
| Catarrhal, - - -    |          |        |        |        |      | 1     |       |         |       | 1        |      | 1    | 3      |
| Yellow, - - -       |          |        |        |        |      |       |       | 47      | 247   | 93       | 23   |      | 410    |
| Nervous, - - -      |          |        |        |        |      |       |       |         |       | 1        |      |      | 1      |
| Adynamic, - - -     |          |        |        |        |      |       |       |         |       | 1        |      |      | 1      |
|                     | 59       | 31     | 39     | 47     | 52   | 142   | 197   | 259     | 439   | 284      | 150  | 79   | 1758   |

Total admissions of all diseases, 4404.

| 1843.<br>FEVERS.    | January. | Feb'y. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|---------------------|----------|--------|--------|--------|------|-------|-------|---------|-------|----------|------|------|--------|
| Intermittent, - - - | 31       | 30     | 35     | 31     | 19   | 40    | 70    | 98      | 128   | 136      | 149  | 76   | 843    |
| Typhoid, - - -      | 2        |        |        |        |      |       |       |         |       |          | 2    |      | 4      |
| Remittent, - - -    | 1        |        |        | 1      |      | 9     | 40    | 75      | 49    | 12       | 8    | 10   | 205    |
| Catarrhal, - - -    | 1        |        |        |        |      |       |       | 1       |       |          |      |      | 2      |
| Bilious, - - -      | 1        |        |        | 1      | 15   | 3     | 37    | 5       | 2     | 2        | 3    | 2    | 71     |
| Typhus, - - -       |          |        |        |        |      | 3     | 6     |         |       |          |      |      | 9      |
| Congestive, - - -   |          |        |        |        |      | 3     | 17    | 4       |       |          |      |      | 24     |
| Gastric, - - -      |          |        |        |        |      | 1     | 1     | 1       |       |          |      | 4    | 7      |
| Continued, - - -    |          |        |        |        |      | 1     |       |         |       |          |      |      | 1      |
| Yellow, - - -       |          |        |        |        |      |       | 23    | 188     | 365   | 351      | 111  | 15   | 1053   |
| Cephalic, - - -     |          |        |        |        |      |       |       |         |       |          |      |      | 3      |
|                     | 36       | 30     | 35     | 33     | 34   | 60    | 194   | 372     | 544   | 501      | 273  | 107  | 2222   |

Total admissions of all diseases, 5013.

| 1844.<br>FEVERS.    | January. | Feb'y. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|---------------------|----------|--------|--------|--------|------|-------|-------|---------|-------|----------|------|------|--------|
| Intermittent, - - - | 66       | 49     | 41     | 32     | 44   | 75    | 176   | 258     | 255   | 261      | 216  | 116  | 1589   |
| Remittent, - - -    | 2        | 4      | 2      | 1      | 4    | 24    | 30    | 47      | 67    | 55       | 5    | 3    | 244    |
| Yellow, - - -       | 2        | 2      |        |        |      | 1     | 1     | 1       | 68    | 52       | 25   |      | 152    |
| Typhoid, - - -      | 6        |        | 1      | 3      |      | 3     | 10    | 12      | 11    | 8        | 6    | 20   | 80     |
| Simple, - - -       | 3        | 6      | 3      |        |      |       |       |         |       |          |      |      | 12     |
| Gastric, - - -      | 1        |        |        |        | 2    | 1     |       |         | 5     | 2        |      |      | 11     |
| Typhus, - - -       |          | 4      |        |        |      |       |       |         |       |          |      |      | 4      |
| Bilious, - - -      |          |        | 2      | 4      | 2    |       | 1     |         |       | 3        |      | 1    | 13     |
| Inflammatory, - -   |          |        | 1      |        |      |       | 2     |         | 2     | 2        | 2    | 2    | 11     |
| Congestive, - - -   |          |        |        | 1      | 7    | 11    | 17    | 14      | 13    | 15       |      | 3    | 81     |
| Adynamic, - - -     |          |        |        |        |      | 2     | 2     |         | 2     |          |      |      | 4      |
| Continued, - - -    |          |        |        |        |      |       |       |         |       | 3        |      |      | 5      |
| Eruptive, - - -     |          |        |        |        |      |       |       | 1       |       |          |      |      | 1      |
|                     | 21       | 84     | 63     | 52     | 106  | 151   | 201   | 151     | 339   | 241      | 206  | 148  | 2207   |

Total admissions of all diseases, 6136.

| 1845.<br>FEVERS.    | January. | Feb'y. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|---------------------|----------|--------|--------|--------|------|-------|-------|---------|-------|----------|------|------|--------|
| Intermittent, - - - | 7        | 75     | 57     | 44     | 79   | 112   | 145   | 96      | 279   | 196      | 189  | 124  | 1403   |
| Typhoid, - - -      | 7        | 6      | 5      | 2      | 10   | 8     | 11    | 14      | 18    | 20       | 15   | 23   | 139    |
| Remittent, - - -    | 2        | 1      |        | 1      | 11   | 17    | 38    | 34      | 33    | 17       |      |      | 154    |
| Congestive, - - -   | 3        |        | 1      |        | 1    | 2     | 1     | 4       | 5     | 4        |      |      | 21     |
| Inflammatory, - -   | 2        |        |        |        |      |       | 1     | 1       |       |          |      |      | 4      |
| Yellow, - - -       |          | 1      |        |        |      |       |       |         |       |          |      |      | 1      |
| Continued, - - -    |          | 1      |        | 2      | 1    |       |       |         |       |          |      |      | 5      |
| Nervous, - - -      |          |        |        | 1      |      | 1     | 1     |         |       |          |      |      | 3      |
| Bilious, - - -      |          |        |        | 1      | 2    | 6     | 1     | 1       | 1     |          |      |      | 14     |
| Simple, - - -       |          |        |        | 1      |      | 4     | 1     | 1       | 1     | 2        |      |      | 9      |
| Pernicious, - - -   |          |        |        |        | 2    |       | 2     |         |       | 1        |      |      | 4      |
| Ephemeral, - - -    |          |        |        |        |      |       |       |         | 1     |          |      |      | 1      |
| Adynamic, - - -     |          |        |        |        |      |       |       |         | 1     | 1        |      |      | 2      |
| Scarlet, - - -      |          |        |        |        |      |       |       |         |       |          | 2    |      | 2      |
| Catarrhal, - - -    |          |        |        |        |      |       |       |         |       |          |      | 1    | 1      |
|                     | 21       | 84     | 63     | 52     | 106  | 151   | 201   | 151     | 339   | 241      | 206  | 148  | 1763   |

Total admissions of all diseases, 6136.

| 1846.<br>FEVERS.         | January. | Feb'y. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|--------------------------|----------|--------|--------|--------|------|-------|-------|---------|-------|----------|------|------|--------|
| Intermittent, - - -      | 79       | 58     | 75     | 76     | 85   | 138   | 214   | 227     | 359   | 376      | 310  | 81   | 2078   |
| Typhoid, - - -           | 30       | 13     | 7      | 5      | 10   | 12    | 14    | 17      | 5     | 7        | 23   | 52   | 195    |
| Typhus, - - -            |          |        |        |        |      |       |       |         |       |          |      |      |        |
| Remittent, - - -         | 3        | 3      | 5      |        | 7    | 6     | 2     | 9       | 22    | 36       | 7    | 3    | 103    |
| Congestive, - - -        |          |        | 1      |        | 1    | 2     | 4     | 2       | 5     | 9        | 2    | 5    | 31     |
| Yellow, - - -            |          |        |        |        |      |       |       |         | 29    | 83       | 32   | 4    | 148    |
| Bilious, - - -           |          |        |        | 1      |      | 1     |       |         | 2     |          |      |      | 4      |
| Pernicious Intermittent, |          |        |        |        |      |       |       |         |       | 6        | 4    | 1    | 11     |
| Adynamic, - - -          |          |        |        |        |      |       |       |         |       |          |      |      |        |
| Scarlet, - - -           | 2        |        | 2      |        | 1    | 2     |       |         |       | 1        |      |      | 8      |
| Catarrhal, - - -         |          |        |        | 1      |      |       |       |         |       |          |      |      | 1      |
| Nervous, - - -           | 1        | 1      |        |        |      |       |       |         |       | 1        |      |      | 3      |
| Malignant, - - -         |          |        |        |        |      |       | 2     |         |       |          |      |      | 2      |
| Larvata, - - -           |          |        |        |        |      |       |       |         | 2     | 2        | 1    | 1    | 6      |
| Pernicious, - - -        | 2        |        |        |        |      |       |       |         | 9     |          |      |      | 11     |
| Gastro-Hepatic, - -      |          |        |        |        |      |       |       |         |       | 1        |      |      | 1      |
| Ataxic, - - -            |          |        |        |        |      |       |       |         |       |          | 1    |      | 1      |
|                          | 117      | 75     | 90     | 83     | 104  | 161   | 246   | 255     | 433   | 522      | 380  | 147  | 2603   |

Total admissions of all diseases, 8044.

| 1847.<br>FEVERS.    | January. | Feb'y. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|---------------------|----------|--------|--------|--------|------|-------|-------|---------|-------|----------|------|------|--------|
| Intermittent, -     | 144      | 117    | 98     | 153    | 140  | 211   | 223   | 74      | 53    | 258      | 380  | 341  | 2192   |
| Typhoid, -          | 40       | 21     | 50     | 73     | 66   | 20    | 7     | 2       | 1     | 6        | 60   | 111  | 457    |
| Typhus, -           |          | 2      | 4      | 107    | 165  | 369   | 57    | 1       |       | 4        | 100  | 236  | 1045   |
| Remittent, -        | 4        | 1      | 4      | 9      | 17   | 38    | 69    | 64      | 25    | 12       | 18   | 8    | 269    |
| Congestive, -       | 1        | 1      | 1      | 2      | 3    | 12    | 10    | 1       |       | 1        | 2    | 2    | 36     |
| Yellow, -           |          |        |        |        |      | 5     | 148   | 1611    | 777   | 219      | 49   | 2    | 2811   |
| Bilious, -          | 2        |        |        | 2      |      | 4     | 7     | 2       | 1     | 9        | 7    | 8    | 42     |
| Pern. Intermittent, | 1        |        |        |        | 2    | 1     |       |         |       | 1        |      |      | 5      |
| Adynamic, -         | 1        |        |        |        |      |       |       |         |       |          |      |      | 1      |
| Ephemeral, -        |          |        |        |        | 3    |       |       |         |       | 2        | 1    | 6    | 12     |
| Catarrhal, -        |          |        |        |        |      | 1     |       |         |       |          | 4    | 18   | 23     |
| Inflammatory,       |          |        |        |        |      |       |       | 1       |       |          |      |      | 5      |
| Continued, -        |          |        |        |        |      |       |       |         |       |          | 1    | 2    | 3      |
|                     | 193      | 142    | 157    | 346    | 396  | 661   | 521   | 1756    | 857   | 512      | 622  | 834  | 6901   |

Total admissions of all diseases, 11,890.

In justice to Dr. Fenner, it should be observed, that he has given the names of fevers as he found them on the books of the hospital, without attempting to rectify the "*very faulty nomenclature* applied to fevers," particularly in the city of New Orleans.

From the above "tables, it appears there were admitted, of all kinds of fever, 19,445 cases—of which 9991. were marked '*Intermittent.*' Add to which 26 marked '*Pernicious*' and '*Malignant Intermittent,*' and 257 marked '*Congestive*' (which is only the American cognomen for the same form of *Intermittent* fever), and you will have 10,274 Intermittents, or *more than one-half of the whole amount, by 1103.*

"Is it not curious to note the gradual increase and decline of intermittent fever at this hospital? And also the remarkable fact that this form of fever *is never entirely absent, not even at the zenith of the worst epidemics of the yellow fever?* In August, 1847, when there were admitted 1611 cases of *yellow fever*, there were also admitted 74 cases of *intermittent*. But examine the statistics carefully, and you will discover other curious facts, which I shall not take the time to point out.

"The following table will show the relative preva-

lence of what is marked '*Intermittent fever*' at the different seasons of the same seven years :—

|         | Spring. | Summer. | Autumn. | Winter. |
|---------|---------|---------|---------|---------|
| 1841    | 112     | 403     | 177     | 92      |
| 1842    | 119     | 453     | 394     | 135     |
| 1843    | 85      | 208     | 413     | 137     |
| 1844    | 117     | 469     | 732     | 231     |
| 1845    | 180     | 353     | 664     | 206     |
| 1846    | 236     | 569     | 1045    | 218     |
| 1847    | 391     | 508     | 691     | 602     |
| Totals. | 1240    | 2963    | 4116    | 1621    |

“Two interesting questions may here be examined, viz., *What proportion of all this intermittent fever really originated in New Orleans, and in what part of the city did most of it occur?*

“The city of New Orleans is certainly a *great thoroughfare*, and has a larger transient or floating population, perhaps, than any other to be found. It is accessible by ships, steamboats, and land carriage. It is surrounded by a low, level, and very fertile country, having a large number of free white laborers. This class in the country is engaged principally in draining wet land, and, to some extent, in the mechanic arts; about the city, it is also extensively engaged in draining the suburbs; but, perhaps, to a greater extent in street labor, such as paving, draying, and loading and unloading ships and steamboats on the levee. Their residences are chiefly in the newer and more retired parts of the city, where rents are cheapest; but they are generally interspersed among those of the wealthier class.

“Now, the Charity Hospital is opened *gratuitously* to all indigent persons, male and female, white or colored, who may wish to enter, and there is no obstacle to admission. This charity is only offered to the indigent, but pay wards are provided for those who are able to afford a moderate compensation.

“I believe it has been established, that the poorer classes suffer more than any others from all kinds of fevers. Such is certainly the fact here, where the usual *exciting causes*, such as intemperance in eating and drinking, and exposure to the hot sun, etc., are very potent. The records of the Charity Hospital do not afford any precise information as to the length of residence in New Orleans. The question is asked, and the time stated; but the clerk informed me that he made no distinction between a residence in the city proper and the neighboring country. The house surgeon, and one of the clerks, both gave the opinion that most of the cases of intermittent fever occurred amongst the laborers in the suburbs and vicinity of the city. But the truth is, the laborers on the levee, streets, and canals, furnish the greatest number of cases of *all kinds of fever* at this place. My own opinion is, that those localities, within the precincts of the city, which afford the greatest amount of intermittent fever, also afford the greatest amount of remittent, bilious, and yellow fevers; moreover, that they are all *closely allied affections*.

“If I were asked what sort of *index* these hospital statistics afford as to the prevalent fevers among the better classes of society in this city, I might be at a loss for a satisfactory reply. I think that the people in good circumstances, who live well (as they generally do), and are not imprudent, suffer but little from fever in this city. Those who have but recently settled here, are apt to take yellow fever, when it prevails; but, as they generally have prompt attendance, the mortality amongst them is small, and many escape it entirely. They appear to suffer more from the eruptive fevers than any others. No one, aware of the stupid imprudence and negligence of the laboring classes, can be surprised at the mortality amongst them.

They receive high wages for their labor, and, having no idea of economy, it too often causes their ruin.

“One more reference to the statistics, and I have done. It appears that the total admissions of all diseases into the *main building* of the Charity Hospital, during the above-stated period of *seven years*, was 45,713, of which 19,445 were for *fevers*, and of these last, 10,274 were for the different forms of *intermittent fever*.”

From 9th August to 10th October, 1847, the following cases are reported at Montgomery, Ala.: Fever, Intermittent, Simple, 319; Remittent, Simple, 141; Remittent, Pernicious, 10; Remittent, Infantile, 11; Typhoid, 2.

At Woodville, Miss., occurring in the practice of three physicians, from 15th August to 14th October, 1847: Fever, Intermittent, 38; Remittent, 45; Remittent, Infantile, 25—one fatal; Continued Bilious, 6; Congestive, 9—one fatal.

I have been informed by a respectable citizen (Mr. Davis) of Decatur, Ala., that, in 1840, there were 57 families in town, and in the sickly season there was sickness in 52 of them, in 12 of which all were sick, both black and white. It was also very sickly at this place, and in the surrounding country, in the summer and autumn of 1836, with considerable fatality; one workman made 74 coffins. At this place, in the autumn of 1848, I noted 39 cases of Quotidian Intermittent; 8 Tertian; 8 Double Tertian; 2 Quartan; 13 Irregular, mostly inclined to the Quotidian type; and a few cases of the Remittent and Congestive forms.

This summary has, perhaps, been already sufficiently extended. From this review it appears that the *intermittent* is by far the most common form of malarious fever. From extensive inquiries, and from my own observation, the quotidian is the most common type of in-

termittent fever. In some unhealthy localities, some believe the tertian to be the most common type. The tertian generally being a severer and more obstinate form, and, therefore, more frequently requiring medical aid, may explain the reason why authors have been led to suppose it is the most common.

M. Nepple has endeavored to determine under what circumstances intermittent fevers may manifest a quotidian, tertian, or quartan type. It would appear that the relative frequency of these types varies with the latitude. Out of 3,114 cases of fever treated at Bona and Algiers, and out of 954 cases treated in the canton of Marthiel (Ain), the types were as follows:—

|                  | Bona and Algiers. | Ain, France. |
|------------------|-------------------|--------------|
| Quotidian fevers | - - 2,181         | 443          |
| Tertian          | - - 901           | 420          |
| Quartan          | - - 32            | 91           |

All medical writers, who have written on fever as it exists in northern climates, agree in regarding the tertian as the most common type, while the above facts prove that the quotidian is more frequent in warmer latitudes. The quotidian type, according to M. Nepple, occurs most frequently in warm years, while the tertian form is, on the other hand, most frequent in cold years; the quotidian type also appearing to be less dependent on marsh miasmata than on accessory circumstances.\*

COMPARATIVE LIABILITY, &c.—In addition to my own observation and experience, I have made considerable inquiries in relation to the “comparative liability of the sexes, of the black and white races, and of different periods of life, to the several forms of the disease; the influence of race upon its severity and danger.”

1st. As to the liability of the sexes, perhaps males

\* See London Med. Gaz., Sept. 1846, or Med. News, Dec. 1846.

are somewhat more frequently the subjects of the several forms of malarious disease, than females ; but it appears that the difference is very little ; and under the same circumstances there is perhaps no difference, one being just as liable to it as the other.

2d. As regards the comparative liability of the *black* and *white races* to the several forms of the disease, I believe I can confidently state, that when both are placed under the same circumstances, there is no difference ; nor does there appear, under the same circumstances, any difference as to its severity or danger. Those who have resided for some time in a malarious district, appear to be less liable to it, and its severity less with them, than those who have recently arrived from a healthy region of country ; hence, the citizens of Charleston, South Carolina, on visiting their rice plantations in the country, are more obnoxious to it than the work hands who remain on the plantations. It is also disposed to be much more virulent under these circumstances. Dr. Dickson, formerly of Charleston, now of New York, says : “ In the bills of mortality for the city of Charleston, you will find every year a certain number of cases distinguished by the appellation of ‘country fever.’ The phrase is employed to denote the febrile attack, which follows within a short time, and with appalling certainty, an exposure to the concentrated malaria of the low country in our immediate vicinity. To sleep a single night upon his plantation, involves the southern agriculturist in the most serious danger ; nay, he is not safe if he indulge himself in frequent visits, even by day, to his rice fields, or inhale too often, under any circumstances, the pestilential air of our swamps and marshes.” It is proper to remark that the slaves which reside on these plantations are by no means exempt from malarious disease, but the law above referred to appears to hold good here, as else-

where, viz.: that those who have resided for some time in a malarious district are less liable to it, and its severity less with them, than those who have recently arrived from a healthy region of country. I have been informed that the negroes use "*bitters*" pretty freely, on these rice plantations, as a prophylaxis. The planters in Alabama, Tennessee, Mississippi, Louisiana, Arkansas, and elsewhere, who reside on their plantations, together with their families, appear to be no more liable to the several forms of malarious disease than the negroes; but, in some seasons and localities, the negroes appear to suffer most (perhaps on account of their greater exposure), especially from what is termed *typhoid pneumonia*, in the southern and western States, which seems to be caused and modified by *malaria*, *cold and humidity*, and exposure. This form of disease appears to be more common and fatal amongst the black population than the white, especially where the latter are not exposed in out-door business; and I believe it is rather more common among the black males than the black females, where the latter remain mostly within doors, while the former are exposed to the vicissitudes of weather, especially wet weather, in the latter part of the winter, and during the spring months; for it is at these times that this form of disease mostly prevails. I would not wish to be understood that the white population are exempt from it; nay, in certain unhealthy localities it sometimes prevails with great malignity amongst them. A great many, both black and white, suffered, and many died of it, in Decatur, Ala., and vicinity, in the latter part of the winter and spring in 1846; and again during the same season in 1847. I believe it is generally more malignant early in the spring than at any other time;—but I will defer the further consideration of this subject till I come specially to treat of it.

3d. As to the comparative liability of the different pe-

riods of life to the several forms of malarious disease, it appears that those between the ages of two years and fifty or sixty, are most liable to *intermittent fever*. I believe that those who are over sixty years of age are somewhat less liable to it than those under two years. The susceptibility of those under two years appears to increase with increase of age. And here I will take occasion to remark that young children are more frequently the subjects of intermittent fever, than is supposed by many. I have frequently known them laboring under this form of disease when it was not suspected by their parents, who supposed their child was very sick with some other malady, or they did not conjecture what was the matter. I have also known practitioners to overlook or mistake its character. Of this I shall have more to say when I come to speak particularly of intermittent fever.

*Children* under five years of age are less liable to *remittent fever* than those who have passed this age. Those between two and five years of age appear to be more liable to it than those under two years, but it does not appear to occur very frequently in the former. Those under two years of age, so far as I am aware, are seldom the subjects of remittent fever, though they are not entirely exempt from it. Professor Geddings, of Charleston, in 1822, speaks of an infant that died of autumnal fever, which Professor Dunglison notices under the head of Malignant Remittent Fever.

It appears that a very large majority of the cases of *congestive fever* occur among adults, or those who have arrived at the age of puberty; though it is not exclusively confined to them; as children of three years, or five years and upwards, are sometimes the subjects of it. In the autumn of 1848, I saw a case in an infant about two and a half months old.

*Poverty and destitution*, want of sufficient and whole-

some nourishment, exposure and intemperance, undoubtedly largely contribute to render all ages, sexes, or races, much more obnoxious to the several forms of malarious disease.

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## CHAPTER II.

### INTERMITTENT FEVER—CHILLS AND FEVER.

CAUSES.—I will first offer what I have to say of the causes of *intermittent fever* (the "*fever and ague*," or "*fever and ager*," of many of the country people); then proceed to give a description of the several forms, pathology, complications, sequelæ, treatment, etc.

As my object is a fair and impartial statement of facts, designing to be plain and practical, I will not enter into metaphysical disquisitions in relation to what a majority of authors of the present day consider as the essential cause of this affection—viz., malaria. What are termed malarious diseases are generally considered to be peculiar to themselves, and acknowledge the same cause or causes, more or less modified. They are endemic in many parts of the southern and western States, as well as in many other parts of the world, especially in low, marshy, and swampy regions; and on nearly all the principal, and many of the smaller water courses in the southern and western States; but they are not always confined to these, sometimes making their way into hilly and mountainous regions; indeed, in some elevated hilly places they are endemic. They are, however, most generally disposed to penetrate into hilly and mountainous regions when they appear as an epidemic or endemico-epidemic. Nor do they prevail as an endemic in all swampy regions of country. Professor Dunglison says: "Districts, indeed, similar to those which in certain re-

gions are known to disengage the marshy miasm in great abundance, may, in other regions, be perfectly salubrious. It is not every marsh that exhales the fitful pest. In the eastern parts of this country, many marshes exist, where agues are unknown; and, again, malarious diseases prevail in fearful intensity, in the most pernicious form, where there is no such thing as a marsh within many miles." Dr. Cartwright, of Natchez, Mississippi, asserts, that the *Jussieuia grandifolia*, or floating plant of the bayous and lakes of Lower Louisiana, has the power of preventing the development of malaria in regions particularly adapted to its generation; and, moreover, affirms that it purifies all stagnant water in which it grows; that of the lakes and bayous inhabited by it being as pure to the sight, taste, and smell, as if it had just fallen from the clouds. He ascribes to the presence of, and the peculiar hygienic, or health-preserving properties of this plant, the remarkable exemption of the inhabitants of Lower Louisiana from malarious or miasmatic diseases. He says, the fact, that the region of country in which this aquatic plant abounds, is exceedingly healthy, can be established beyond cavil or dispute, but nevertheless contains more stagnant water and swamps than any other inhabited district, of the same extent, in the United States.

This family of diseases have had assigned as their cause, besides miasm or malaria, heat and moisture, warm days followed by cool, humid nights; carbonic acid, and sulphuretted hydrogen gas; animalculæ; aërial, tellurical, or geological disturbances or modifications in electricity; by local irritation, etc., etc. But in the present state of our knowledge, of the qualities, properties, or nature of the commonly assigned cause, we may confess our ignorance. If there is any such thing as *miasm*, perhaps, in the march of mental improvement,

future generations may be enabled to appreciate its properties or its nature. Some writers, with plausibility too, deny the existence of such a thing. There are, however, what we may term *exciting* or *secondary causes* (if there is such a poison as miasm, as the chief or primary cause), which we can better appreciate or comprehend. Of these we may mention, exposure to sudden vicissitudes of weather, as high atmospheric temperature during the day, followed by cool, humid nights; intemperance; want of proper and sufficient nourishment; lying, during the night especially, in low, damp situations; and everything which has a tendency to produce relaxation and debility. Exposure to the rays of the sun, especially when the weather begins to get a little cool in autumn; and eating muscadines or watermelons late in the season, are noticed as causes by the non-professional. Some authors state that intermittents have been brought on by various crude ingesta, and by local irritation, without being exposed to marsh effluvia. A case of remittent fever, produced by a *one grain weight* in the intestines of a child eighteen months old, is noticed in the October number of the *Western Lancet*, for 1848. This case is reported by Richard Payne Cotton. It escaped from the rectum after a period of six weeks, appearing to have lost nothing in its transit, retaining its usual brightness.

Professor Dunglison says: "The health of a locality is, likewise, often connected with the winds that prevail during the latter part of summer and autumn. In this country, they are chiefly from the southward, or have, what the sailors term, *southing* in them. These winds are warm, and, when from the east, are moist at the same time. Inhabitants of the northern shores of our rivers, that exhale malaria, or to the northward of any malarious locality, may, therefore, be expected to suffer more than those to the south of those localities; and such is, *cæteris*

*paribus*, the fact." The reverse of this holds good, generally, in the south-western States, at least, so far as the author's observations extend. In this region of country, a constant cool wind from the north, in aguish districts, is almost sure to bring about intermittents, and other malarious diseases. This is particularly noticed, not only by physicians, but the people generally. It has also been observed that the inhabitants on the north side of a river suffer more from malarious diseases when the wind is from the south, and that both sides of a river, which runs westwardly or eastwardly, are seldom or never equally sickly at the same time. These remarks apply particularly to the Tennessee River Valley in North Alabama. I have heard it suggested that the more malignant or congestive forms of malarious fever, were not known in this country till since the epidemic or Asiatic cholera visited this continent. Though congestive fever appears to have been much more common since this time, and more particularly noticed by that name, yet it was observed in this country prior to the visitation of the cholera.

As a means of prophylaxis, many southern planters are in the habit of leaving a woodland surrounding their residences, or especially between their dwellings and any swamp that may be near, which is suspected to generate the marsh poison or miasm. Though this does not secure immunity, it perhaps renders them somewhat less liable. It would seem that the ancients entertained similar views as to the protective influence of forests, and, therefore, it has been supposed that the woods in the vicinity of Rome were consecrated to Neptune, to secure them from the axe. If the *Jussieuia grandifolia* has the powers ascribed to it by Dr. Cartwright, would not its propagation in all our swampy, malarious districts, be one of the greatest blessings to the inhabitants of these regions? and almost

induce them to suppose; if they were believers in ancient mythology, that most of the *Fates*, which escaped from *Pandora's box*, were destroyed by this aquatic plant; as the less informed Irishman believes that St. Patrick destroyed all the frogs and serpents in Ireland, and rendered that island uninhabitable by these animals?

I have sometimes been led to notice, that a removal from a malarious district to a healthy one, during what may be supposed to have been the *latent* period, apparently has a tendency to develop some form of malarious disease. If this be true, it is a curious fact. Professor Dickson's observations appear to corroborate this idea. He says, "It has been a long received opinion that a return to our comparatively healthy city (Charleston) atmosphere, the ordinary summer residence of so many planters, during the latent period, which ensues after efficient exposure, as above described, endows the coming attack, in some obscure manner, with a peculiar violence and malignity," and that the type "is apt to be irregular, confused, and complicated;" and further, "a similar aggravation of violence and danger is affirmed to occur everywhere, when a subject efficiently exposed to the influence of febrific miasmata, has removed during the latent period to a pure and salubrious atmosphere. This is true, as Flint tells us, of the upland prairies of the far West, and as I have more than once had occasion to note, in our own lofty mountain regions."

Some who have had an attack of intermittent fever one summer or autumn, appear, under favorable circumstances for its development, to have acquired a proclivity or obnoxiousness to it the next succeeding summer or fall, and hence some authors have made an *annual variety of intermittent fever*.

Before noticing the different stages of a paroxysm of *intermittent fever*, I will notice what may be considered

the *prodromic form or type* of malarious disease. This is indicated by a slight feeling of *malaise*, or restlessness, feverishness, headache; slight, rather obtuse pains or aching in the loins, and sometimes elsewhere; nervousness, sometimes alternated with, or followed by flushes of heat, dryness and moisture of the skin. If these disturbances take place about meal time, the appetite is noticed to be not good, much less food than usual sufficing for the repast. The fingers and toes, during these irregular nervous disturbances, are apt to be a little cool, and, perhaps, generally moist, especially the feet, and sometimes other portions of the body; but probably most frequently not noticed by the patient, unless the attention be particularly pointed to them by interrogatories. A feeling of drowsiness, or slight languor, or headache may ensue. These slight disturbances, sometimes so slight as scarcely to attract attention, may recur about the same time every day, every other day, or at irregular periods, for several days, a week or more, and sometimes pass off; but frequently, if not attended to, is soon developed into a distinct *paroxysm* of intermittent, remittent, or congestive fever.

R. S. Holmes, M. D., Med. Staff, U. S. A., in his *Remarks on the use of quinine in Florida, and on malaria and its influence in that State*, says: "I believe there is scarcely a person even in good health in a miasmatic region, who is not subjected in some degree to the effects of the unseen agent around him. His rest will be broken at night; his appetite will not be so good as formerly; he will not enjoy that feeling of full health he has been accustomed to; his system will be attacked from time to time by the offshoots of the diseases preying on others around him, though he will not be sick, and may escape with a like freedom from disease during all his sojourn in the country: but the whole constitution seems in some

degree to labor under the influence of malaria. Slight wounds, that would heal elsewhere in a few days' time, must here undergo the slow process of suppuration and granulation, and even this does not come on easily, the wound remaining for several days without any visible advance towards a cure. You cannot persuade a slight incision of the skin to heal by adhesive inflammation; and I have repeatedly seen wounds in habits that were to all intents healthy, assume a deep, burrowing suppuration. I was in the habit at first of discharging patients when the wound had closed by granulations, if not on an important part of the body, and not interfering with common duties; but on the slightest exercise or excitement, inflammation would set in afresh, in surrounding parts; the granulations would assume an unhealthy appearance; suppuration, if advanced, would be slow in progress, and of an unhealthy form: perfect rest, good diet, occasionally tonics; and poultices or stimulants to the part, were necessary for a cure. Many of these wounds, especially about the fingers, ran rapidly into deep-seated inflammations. A miasmatic constitution of the atmosphere is particularly favorable to the formation of whitlows. I treated these by deep incisions, and generally, some hours after, sprinkled the part over with calomel; but the first incisions scarcely ever proved sufficient; the suppuration would extend beyond them. The pain of these whitlows will take on regular remissions."

This *prodromic form* or *type* of malarious derangement may be easily cured by quinine or other tonics, it sometimes being necessary to take an aperient. Some physicians, when busily engaged in practice, if they feel some of the manifestations of this prodromic form or type, are in the habit of immediately taking a dose of quinine.

I have thought it proper to consider this condition first, and separately, because those thus affected are not

prevented from attending to their ordinary business, and it frequently attracts so little attention, unless its milder manifestations are increased to greater disturbances, that its treatment is often neglected, which, if it had been attended to, might have averted an attack of intermittent, remittent, or congestive fever.

Before a paroxysm of any of the types of intermittent fever occurs, it is generally, if not always, preceded by *precursory* symptoms; as, aching in the loins, with nervous sensations running up and down the same; which some have likened, for want of a better simile, to cold water trickling down the loins; yawning, stretching; being a little cool, with a disposition to draw near the fire, etc. Sometimes pains in the limbs or joints, slight headache, indisposition, lassitude, the fingers and toes become cool, and the features are generally somewhat pallid. To these soon succeeds,

1. THE COLD STAGE, CHILL, OR RIGOR, sometimes merely attended with an uncomfortable sensation of coldness, especially of the hands and feet, and a feeling of uncomfortableness and oppression; at others stretching, gaping, and drawing near the fire, with an involuntary shivering or shaking of the whole body, more or less intense, at times causing chattering of the teeth. The aching and trickling sensations of the back, noticed during the premonitory stage, are augmented. There is generally a disposition to draw the knees and chin near each other, as though the patient wished to get into as small a compass as possible; the skin is pale, and generally of a rather purplish or muddy hue, though in other cases slightly tinged with a yellowish hue. These are more distinct on some parts than others; as the lips, about the face and neck, fingers, particularly blueness of the nails, &c. The cutaneous surface also becomes con-

tracted, wrinkled, more or less rough; which condition has been called *cutis anserina*, or goose skin. The cold, chilly, benumbed sensations of the patient, are not always in accordance with the actual reduction of the temperature of the surface. The sensations of the patient may incline him to believe that he is very cold, when to the hand of any of his attendants there appears to be little or no alteration of the temperature of the surface; or the patient may correctly appreciate the degree of coldness; or he may feel cool, when to the touch of another he is warmer than natural, especially about the chest; or he may feel hot when he is cool. The sensible perspiration is suspended; the pulse is small, weak, contracted; but in the sanguine temperament may be rather firm, and is generally increased in frequency. Respiration is embarrassed, irregular, and increased in frequency, with a full inspiration or deep sigh occasionally, in some cases attended with a short, dry cough; a sensation of oppression; enfeebled and tremulous voice. In some cases, a sensation of weight or heaviness, pain and distressing nausea of the stomach, at times, in some cases, attended with vomiting of a ropy, glairy mucus; and, if the vomiting continues for some time, succeeded by yellowish bile, and sometimes even blood; a wild stare of the eyes; great desire for cold drinks; the mouth and fauces rather dry and clammy; cramps of the stomach and abdomen, and upper and lower extremities. Urine usually copious and clear.

Though some or all of the above symptoms usually characterize the cold stage, yet others sometimes occur, which are commonly regarded as *anomalies*, and which we will notice presently.

*The duration* of the cold stage is very various, in some cases lasting only a few minutes, in others one, two, three, four, or five hours, or longer. I believe those cases

in which the cold stage is several hours long, are apt to be attended with great distress of the stomach, nausea and vomiting, but this is not always so.

In many cases the mental functions are increased, ideas passing through the mind with unusual rapidity, with concomitant restlessness, confusion and irritability of mind, and sometimes slight delirium: this is more likely to occur in those of a sanguine or excitable temperament; while it is common for those of a leuco-phlegmatic temperament, especially after they have had ague for a long time, to be dull, careless, manifesting a taciturn moroseness; and this stage in them is frequently characterized only by cold extremities and dulness. In those of full habit, stupor or coma is sometimes induced, but this is more apt to be the case on the approach of, or during the next stage, the stage of excitement.

During the cold stage, the whole body is diminished in volume; rings on the fingers, which were previously tight, become loose, and tumors near the surface are reduced in size.

But it must not be supposed that all the above symptoms or phenomena are to be met with in every case. In some cases there are only slight sensations of chilliness creeping along the loins, with cool hands and feet, with some degree of restlessness or languor; and even these are sometimes scarcely noticed. The degree of excitement cannot be anticipated by the intensity or severity of the cold stage, chill, or rigor. Sometimes the reaction will be as great when the feet and hands have merely been observed to be a little cool, with perhaps some creeping, nervous sensations in the back, slight nervous agitation, or feeling of uncomfortableness, as when the rigor is very severe. And here I wish to remark, and desire that especial attention be paid to it, *that infants, and young children generally, merely have*

*cool hands and feet, sometimes attended with restlessness, respiration somewhat embarrassed, and quickness or irregularity of the pulse, during the cold stage of intermittents:* and as the coolness of the extremities is frequently overlooked, or not noticed by the parent or attendant physician, they are puzzled to properly appreciate the nature of the affection; and, in consequence thereof, an improper course of treatment may be, and not unfrequently is, adopted. It is also said that, in young children, a paroxysm is sometimes ushered in by convulsions, but this is more apt to occur at the commencement of the hot stage.

In some cases the febrile condition precedes the chilly sensations. This was the case with the writer in the latter part of August, 1848. About twilight one evening some slight, chilly sensations came on, which were followed by fever; the second evening afterwards a febrile condition came on; and some twenty-five or thirty minutes afterwards, chilly sensations, with the peculiar sensations in the loins were felt, while the febrile excitement continued. Indeed, it is not unfrequently the case, that the chilly feeling and febrile condition are concomitant in their inception, the former passing off after an indefinite length of time. This form is perhaps analogous if not identical with the *epialos* of the ancient Greeks.

It would be impossible to describe all the various modifications and phenomena which at times manifest their appearance in the cold stage of intermittents. In order to fully appreciate them, it is necessary that one should practice a sufficient length of time in a malarious region of country, and observe closely and carefully for himself; and he may be much assisted by frequent conversations and communications with his brother practitioners.

Most commonly, as the chilly feelings begin to abate, transient flushes of heat make their appearance,

which become more and more permanent; the heat of the body is first augmented, and then extends, *pari passu*, to the head and extremities; the reverse of this having taken place during the cold stage. It has been remarked that the nausea and vomiting are commonly most apt to be severe at this time.

2. THE HOT STAGE, OR STAGE OF EXPANSION, as it has been termed, which succeeds the cold stage, is characterized by a full and flushed countenance, quickness of the mental functions, pain in the forehead, and headache, most commonly; restlessness, mobility, and in some cases slight delirium; or a disposition to coma and lethargy; aching in the loins, and sometimes in the extremities and joints. The respiration is still embarrassed, hurried, and oppressed, but in a less degree than in the preceding stage. The pulse becomes more full and developed, still being increased somewhat in rapidity; in some cases the carotids are seen to beat with augmented force and frequency, especially in those of a sanguine temperament, or those who have recently arrived from a more healthy region of country. In these, it is more apt to assume what has been called the *inflammatory variety of intermittent fever*. In many of those whose systems have become debilitated and relaxed from a long residence in a warm and malarious country, the pulse is not usually so full and hard as might be expected by those who practice in more northern and healthy regions. The skin is *dry, hot*, and accompanied with *embonpoint*; or fulness; the mouth dry and clammy, and the breath warmer than natural. The sensation of heat is variable, sometimes considerably augmented,\* at others but little more than natural. At this time, in most cases, there is more

\* Fordyce observed the temperature of the surface as high as 105° Fahr.

or less restlessness, and a disposition to throw off the bed-clothes, in order that the body may be exposed to a cool atmosphere; but in some there is an indifference, dullness, and stupidity, more especially in those who have had the disease a long time, and have become cachectic, with concomitant visceral disease. In some cases the fever is so mild that the patient is able to walk about, feeling nervous and feeble.

The gastric disturbance at the commencement of this stage usually gradually subsides, and is succeeded by cephalalgia, or pain in the head, which, in the robust and sanguine temperament, is sometimes very intense. The urine is scanty and high colored, depositing little or no sediment, and of a sort of pungent, rancid odor.

The *duration* of the *hot stage* is very various, but generally longer than the cold stage. Not unfrequently it passes off in two or three hours, and the individual gets up and walks about, or attends to some light work or business; frequently it lasts for four, six, or eight hours, or more, which is usually succeeded by a greater degree of weakness and languor. Sometimes this stage becomes more and more protracted at each paroxysm, till this form of fever is merged into the remittent form.

The above may be considered the usual manifestations or attendant phenomena of the *cold* and *hot* stages of intermittent fever, but they are not always uniformly so; some of them may be wanting, and other anomalous phenomena, more or less common, manifest themselves; as cramp and intense pain of the stomach, and palpitations of the heart, connected with cold hands and feet; griping pains in the bowels; intense pain in some part of the body, which may be more or less migratory, coming on by spells, with intervals of partial or entire relief. Indeed, almost every form of *neuralgia* may be indicative of the malarious influence; *frontal neuralgia*, or *headache*, which returns every day, or every other day, at about the same

time of day, is not unfrequently observed. Sometimes we observe *dorso-intercostal neuralgia*, *hepatalgia*, *hemicrania*, *toothache*, some form of *rheumatism*, *hiccough*, *mania*, etc. etc.; and these are observed to recur at particular times, with as much regularity as a well-marked case of quotidian or tertian intermittent, and yield to the same remedies as these latter. These are the *masked agues*, *febres intermittentes larvatæ*, of authors, or *dumb ague*, of the non-professional; but I believe a goodly number of the unprofessional, call a case the "*dumb ague*," when the cold stage is scarcely perceived, attended with languor. Diarrhœa and dysentery not unfrequently attend some of the manifestations of malarious influence; and cholera is also mentioned by some authors.

Dr. Eberle says: "In some instances, anomalies of a remarkable character occur, both in relation to the phenomena and the succession of the stages of the disease. I have known a case, in which the first two paroxysms occurred in a perfectly regular manner; but after employing arsenic, unsuccessfully, during the second and third intermissions, the paroxysms returned without a cold stage, the patient experiencing, instead of it, a peculiar feeling of numbness on the top of the head, with great dulness of hearing, for about forty or fifty minutes before the supervention of the hot stage. There are instances on record, of the inversion of the natural order of the cold, hot, and sweating stages; several distinct instances of which occurred under my observation in the fall of 1828. Cases have been noticed, in which the perspiration, in the third stage, was substituted by diarrhœa; and Cleghorn states that he saw tertians, which terminated by an increased flow of urine, with scarcely any sweat." But I will return from this digression, and notice what is commonly considered the last stage of the paroxysm, namely—

3. THE SWEATING STAGE, which usually commences with moisture of the forehead and temples, neck, axilla, chest, inner part of the thighs, soon becoming general; sometimes being very copious, and not only soaking the body linen, but even the bed-clothes; in other cases, there is but a gentle perspiration, or there may only be moisture on some parts of the body. When it is copious, it has a sort of flat, funky smell; when scanty, or slight, less so, and more pungent.

The patient gets better soon after the commencement of this stage; the hot skin of the former stage now assumes its normal temperature, or may even feel a little cooler to another person; the pains and oppression gradually disappear; the respiration becomes free and easy; the pulse full and soft, and but little, if any more frequent than natural. In fact, the patient is every way relieved. The urine is now more or less high colored, and deposits a lateritious or pale red sediment; the odor above noticed may also be perceived, somewhat modified perhaps. "This gradual melioration of the febrile symptoms continues under the free flow of the perspiration, until the paroxysm terminates in a state of perfect *convalescence*, or *apyrexia*." (Eberle.)

Dr. Billing does not consider this *stage* entitled to the appellation, or says there is no third stage, the sweat being "nothing but an indication of renewed secretion by the capillaries; which, after having lost their tone, and been consequently in a relaxed, disturbed, non-secreting state, renew their secretion on being restored to a normal condition."

The above-mentioned three stages are said to constitute a *paroxysm*, or *fit*.

The paroxysm being over, the patient may feel entirely well during the *apyrexia*, though usually rather

weak, languid, lazy, or averse to bodily exertion ; with, in some cases, hebetude of the sensorial or mental powers ; looks pale and sickly ; is very susceptible to the influence of cold ; is easily fatigued by exertion or labor ; the appetite is generally impaired, but in some protracted or chronic cases it is very voracious.

The *duration* of the period of *apyrexia* is modified by the length of the paroxysm, the type of the intermittent, and the means that may be used to avert the next paroxysm.

**TYPES.**—Intermittents having a disposition to recur at certain times, has given rise to distinctive appellations which indicate the *type* ; as, the *quotidian*, which returns every day, or every twenty-four hours ; the *tertian*, every other day ; the *quartan*, every third day. The *double quotidian* has two paroxysms every day ; the first one corresponding with the first one, and the second the second one, the day previous. The *double tertian* has a paroxysm every day, the paroxysms of every other day corresponding. These are the principal types, though others are noticed, especially *irregular ones*, which observe no particular time in their recurrence, but are apt to simulate, in some degree, some of the other types, at least for a time, and then there may be an interval of several days. *Double quartans*, *triple quotidians*, *triple* and *quadruple tertians* occur but seldom. Authors mention the *quintan*, *sextan*, *hebdomadal*, *octan*, *nonan*, *mensual*, *bimensual*, *trimensual*, *annual*, etc. If the paroxysm recurs after an interval of more than three days, I am inclined to believe that they should generally be regarded as relapses, or a return of the disease ; and this is more apt to take place if the preceding attack has induced some local visceral disease and debility ; or the individual is still exposed to the causes of intermittents.

Not unfrequently *one type changes to another* ; and this

reciprocity or interchanging is most common among the different varieties of quotidians and tertians; and these are also more liable to run into the remittent or congestive fever; and these latter, by treatment, may be made to assume some of the intermittent types. Remittent fever, especially in some instances when it appears as an epidemic, is sometimes easily changed to the *intermittent* form, by a venesection. Intermittent fever is also apt to ensue after a remittent has been cured, especially if the case occur in a highly malarious district, and proper attention is neglected.

One paroxysm may follow another in a short time, by exposure and fatigue; indeed, these may bring on a second chill before the paroxysm is over. An individual may have three, four, five, or more chills in one day; again he may have a chill one day, and not another for several days afterwards; and then he may have several in pretty close succession; and then they may again disappear for an indefinite length of time, or entirely. Many respectable medical writers speak of the strong proclivity of intermittents to relapse at certain intervals, as the seventh, fourteenth, or twenty-first days; and also remark that they are more easily and permanently cured by the exhibition of the proper remedies at these periods. In this, there appears at least some inconsistency, some fixing one period and some another. As I have known intermittents to recur or return at so many and various periods, I am inclined to consider these notions as relics of ancient superstition. A believer in these *critical days*, having his mind more particularly directed to them, may observe the recurrence of a paroxysm on those days, while many others may escape his attention.

When the paroxysm comes on earlier in the day than the preceding paroxysm, it is said to be *anticipating*; when later, *postponing*. If one begins before the prece-

ding one terminates, the fever is said to be *subintrant*. Those of this nature are, perhaps, closely allied, if not identical with the *amphemerina* of the Greeks.

As to *complicated intermittents*, it would seem that the malarious influence may attach itself to almost every form of organic or constitutional disease, and as this is of very frequent occurrence, I consider it of much importance to those who have recently commenced practice in a malarious region, in order that they may appreciate this twofold condition, and combine their remedies so as to fulfil this double indication. Visceral affections, dysentery, jaundice, paralysis, apoplexy,\* epilepsy, and the various neuralgias may be regarded as complications.

The various forms of *malarious neuralgia*, if I may be allowed the expression, which strictly observe a periodical recurrence (perhaps a majority of them observe the quotidian type), are generally preceded by some of the mildest premonitory symptoms of ague; as, a feeling of nervousness, or slight chilliness; the feet are apt to get cool and moist, perhaps the fingers also, and moist skin, etc. etc.; and after the paroxysm is over, the urine is apt to be turbid; during the paroxysm clear, and sometimes copious, especially in nervous females.

**PATHOLOGY.**—If *intermittent fever* and other malarious affections are caused by any material substance, as miasm, malaria; poisonous gas of any kind, animalculæ, or anything floating in the atmosphere, it appears most reasonable to suppose that it is inhaled into the lungs with the air in inspiration, there absorbed, admitted into the circulating fluid, the blood, on which it probably in-

\* This *malarious influence*, in reference to the pathological condition of the brain, should, perhaps, be regarded as a sort of *nervous apoplexy* (if it is entitled to the appellation of "*apoplexy*" at all), entirely distinct from true apoplexy.

duces some morbid change, or is carried by it to the *nervous centres*, where it apparently first manifests its morbid influence; or this derangement of the nervous centres may be the result of pathological changes that have taken place in the blood: indeed, the position that the poison is inhaled into the lungs, and there admitted into the circulation, appears tacitly to acknowledge, that, during the *latent period*, some morbid change may be going on in the blood. If malarious affections are caused by the sensible or appreciable conditions of the atmosphere, as heat and cold, and humidity, or by electrical, tellurical, or geological disturbances, it would seem that the primary morbid influence is exerted on the nervous centres, and thence on the nervous system generally; and then, as a matter of course, the whole system participates to a greater or less extent in the derangement.

In the present state of our knowledge, as to the precise nature of these morbid impressions, we can only draw inferences from the effects, and these may be correct or otherwise. Whatever is the primary impression, it appears that the nervous centres are so affected as to prevent them from generating regularly the normal amount of nervous fluid, or that which gives nervous power (call it by whatever name you may); hence, there is a want of equilibrium in the nervous functions, or functions of the different parts of the nervous system, and this is soon succeeded (and probably attended from the beginning at the nervous centres) by manifest disturbances of the circulation, as is evinced by the phenomena of a rigor most unequivocally. This being the case, we need not be surprised that those organs situated internally, of a soft or spongy nature, and freely supplied by large blood-vessels, their nervous power considerably lessened, should suffer from congestion or hyperæmia, and consequent enlargement, as is most commonly observed

of the spleen. The liver, lungs, kidneys, brain, heart, etc. etc., and even the larger vessels themselves, may suffer from congestion. Hence we observe that the intensity and seriousness of visceral diseases, as complications, are in the ratio of the intensity and frequency or repetition of the paroxysms. In this general derangement of the nervous and circulatory systems, the capillaries become affected, and the different secretory functions are disturbed.

PERIODICITY OF MALARIOUS DISEASES.—As to the cause, or the laws that govern the periodical recurrence of *intermittents*, and affections of a kindred nature, though plausible conjectures may be offered, nothing entirely and wholly satisfactory is known. Professor Dunglison makes the following remarks, which in part, I believe, were expressed by Sydenham. “We know nothing of the causes of that periodicity, which is observed in the action of various organs in health, any more than of those which constitute the essence of various periodical diseases. There is probably a periodical movement within us at different periods of the day, which corresponds with the same period in other days, and gives rise to the exacerbations that we notice in hectic and other fevers.” M. Rostan was of the opinion that the cause of the intermittence “is primarily seated in the fluids, in the blood; and that from thence it influences, in a special manner, the nervous system.”

POST-MORTEM examinations have heretofore thrown little or no light on the essence of intermittent fever, and other malarious affections, and perhaps never will; unless, in the process of time, the improvements and discoveries in animal chemistry may enable us to detect some altered or modified condition of the blood and nervous matter;

and the physiologist is better prepared to appreciate, in connection therewith, the peculiarities and properties of the functions of the different parts of the nervous system, both in health and disease.

Some believe that malarious diseases are caused by lesion or disease of the *cerebro-spinal axis*, or spinal marrow, which they also consider to be the cause of the aching in the back and limbs, cold sensations, and shivering. In confirmation of this opinion, they refer to tenderness or pain produced by pressure on some portion of the dorsal or cervical region. Dr. Malone, of Florida, in 1834, appears to have been one of the first whose attention was drawn to this cause or complication of *intermittents*, and he believed that if they were not actually produced by *spinal irritation*, they were kept up by it, secondarily induced. He refers to a case (a female) in which he found the *lower part of the neck and upper half of the dorsal column tender in several places*; which he cured by the application of a mustard cataplasm between the shoulders, just before the coming on of the chill, and by the use of chamomile infusion. Dr. Kremer refers entirely to the first dorsal vertebra, and says, if intermittent fever is considerable, or old, or masked, pressure on it, by giving pain, will suffice to evince its (*spinal irritation*) existence. Dr. Grosheim found the pain to be most in the middle portion of the dorsal region, especially in quodidians—and in five cases, by the application of leeches, cured four of them without any other remedy. Dr. B. Rush Mitchell, of St. Louis, Missouri, considers what is called "*congestive fever*," *toxical apoplexy of the cerebro-spinal system*," and says: "We regret that we have not been able to substantiate our position by dissections which have been made, but the registers of which we have lost." Of late years, southern practitioners have paid more attention to the spinal column in in-

termittents, and some of them are in the habit of cupping or applying local applications to the spine, as adjuvantia, in their treatment. I have examined the spinal column in a great many cases of ague and fever; and though I have seen many cases, especially recent ones, in which I could discover no tenderness on pressure, or in some so slight as scarcely to be perceived, yet, in a large majority of the chronic cases, I have been able to discover one or more *tender spots*, principally, or indeed nearly always, in the *upper half of the dorsal region*; and, occasionally, in some of these cases, in the lower portion of the cervical region. This tenderness of a portion of the dorsal region may extend up and down the spine to the extent of one, two, three, or more inches; and, in some cases, after passing the fingers over a few inches where no tenderness is perceived, another tender spot may be found. I believe, so far as I can rely on my own observation, that it is somewhat more common, and most prominently manifests itself in females of a nervous temperament, in whom it is sometimes so tender, that they will shrink, and indeed scream out, when firm pressure is made. This condition is frequently observed for some time after the intermittent has been cured or disappeared; indeed, in many cases, this spinal affection (as indicated by the sensitiveness of the upper portion of the dorsal region particularly) seems to become much more prominent after the disappearance of the fever and ague; or the individual may be subject to occasional relapses. I may also remark, that this affection of the dorsal region, and in comparatively few cases the lower portion of the cervical region, is quite common among nervous females, and not uncommon amongst males, in the South, unconnected with intermittent fever. This morbid condition of the spinal marrow sometimes extends its influence around the sides of the chest, as is indicated by pain (*dorso-*

*intercostal neuralgia*) extending sometimes to the liver (*hepatalgia*) and mammæ. I believe, in nervous females, it more frequently affects the lower portion of the left mammæ than the right, often exciting in them needless fears that it is the incipient stage of cancer, especially if some of the mammary glands should be rather sensitive or sore on pressure. These pains about the chest, together with a more or less pallid appearance, also often induce them to believe that they are taking phthisis pulmonalis (consumption); or, if it extends to the liver (*hepatalgia*) and shoulder, it is too frequently regarded, even by physicians, as disease of the liver, and the patient is kept under the influence of calomel and blue mass for months, and even years, till his or her health becomes more and more imperfect; and if this mercurial practice (which I regret is too often practiced, to the destruction of many valuable lives) is persisted in, organic diseases are induced, and the unfortunate sufferer is doomed to lead a more or less protracted existence, till consumption, dropsy, or some other form of disease, closes his earthly career. Perhaps females are somewhat more frequently sufferers in these respects than males, but it is not of very uncommon occurrence among the latter. I will defer the further consideration of this subject till I come to speak of it specially.

TERMINATIONS OF INTERMITTENT FEVER.—Perhaps ordinary intermittents very rarely, if ever, primarily produce death; they may, however, assume the remittent or congestive form, and produce this result. Dr. Eberle says he has seen death occur in two cases of simple and mild intermittent; but this is not easy to reconcile; for if they produced symptoms of apoplexy and death in the *cold stage*, I should think they were not very "*simple and mild*," but were perhaps what is now termed "*congestive*

*fever.*" He says: "The violent internal congestions which occur during the cold stage, are well calculated to produce cerebral oppression and apoplexy." I have never known a case of pure uncomplicated intermittent fever to terminate fatally.

This form of disease often produces enlargements of the spleen and other visceral affections, but these usually yield to the remedies for the primary disease, or get well of themselves after the primary affection has been cured, especially if it has only been of short duration; but if more protracted, there are frequent exceptions, especially with regard to the spleen. This viscus may continue enlarged for a long time after the original disease has been cured; indeed, it is often neglected till it becomes permanently enlarged or hypertrophied, and in some cases indurated or semi-ossified; cachexia (a pale tallowish appearance), nervous sympathies, or nervous disorders are produced, especially on the left side of the thorax and corresponding portion of the spine, left shoulder, neck, and head. Sympathies also exist between it (spleen) and the stomach, loins, and womb; and the liver and kidneys may be implicated. These morbid conditions gradually steal upon the health of the individual, till debility, prostration, dropsy, and, in females, derangement of the menstrual functions, and, finally, if relief is not obtained, death closes the scene. Besides the morbid conditions of the spleen above noticed, if intermittent fever is suffered to continue for a long time, it is apt to produce other visceral diseases and conditions which may be regarded as sequelæ; as, enlargement, induration, &c., of the liver; diseases of the heart, stomach; cachexia, anemia, or chlorosis, and derangements of the catamenial functions; anasarca, hydrothorax, ascites, hydrocele, chronic bronchitis, phthisis, etc. etc., and various neuralgic affections.

Dr. Walter Telfer, Medical Superintendent of the Temporary Provincial Lunatic Asylum, at Toronto (Canada West), in his report from April 1st, 1846, to March 31st, 1847, says: "I would here refer to the case of three patients, who, previously to their becoming insane, had been laboring under intermittent fever; after becoming insane, and during the early part of their residence in the asylum, no symptom of that disease appeared. But suspecting, from their previous history, that this disease might still be connected with their insanity, as the latent cause, they were put under the proper treatment for intermittent fever. The insanity began to decline, and, with its gradual disappearance, the original disease again manifested itself in the usual symptoms. Ultimately, complete restoration to health of both body and mind was effected."

DISLOCATION OF THE SPLEEN.—So far as I am aware, *dislocation of the spleen* has entirely escaped the attention of almost all medical writers,—and from this fact, it would seem reasonable to suppose that it is of very rare occurrence; indeed, I believe that there are but few physicians and authors who are aware that such a thing is possible. Several years ago, a case of enlargement and dislocation of the spleen, in a young lady, came under my professional care. She had dysmenorrhœa, and the enlargement and dislocation were principally induced by the perturbations of the system and congestion during very extremely painful catamenial epochs. By protracted treatment the dysmenorrhœa was relieved, the spleen reduced nearly to its natural size, appearing to assume almost its natural position, and seemed to have become attached, apparently by subacute inflammation, to the surrounding parts. Her health was now good; but in the latter part of November, 1847, from exposure, and

riding in the country on a limping horse, during the catamenial period, *inflammation of the cæcum* or *perityphilitis*, was induced, and *cæcal abscess* ensued; the latter obtained egress *via* the vagina; and in consequence of the most violent and oft repeated paroxysms of suffering and congestions, the spleen became again enlarged and dislocated, and she has suffered a great deal ever since; till recently (now December, 1848) her spleen is improving, and her general health getting better again. She suffered much from nervous pains in the spleen, left side of the thorax, extending to the left mammæ, spine, shoulder, neck, head, heart, stomach, matrix, kidneys; the *cæcal abscess* induced pains in the right lower limb, on the lower and right side of the loins, and upper portion of sacral region, in the matrix, right side, etc. She was also much troubled with eructations and singultus. The spleen was so much enlarged (being larger sometimes than at others) as to almost fill one side of the abdomen, sometimes occupying the right side, at others pressing on the brim of the pelvis and fundus of the matrix, but it was most commonly kept on the left side by pressure, and, when in bed, by lying on the left side, with the hips elevated.\* About the last of December, 1848, the abscess healed.

Since writing the above (now May, 1849,) I am gratified to learn that the dislocated spleen is again nearly reduced to its natural size, and has almost assumed its normal position, being lower than natural; and that the dysmenorrhœa is almost entirely well—the result of protracted, and, as the result has proved, proper treatment.

In the latter part of September last, another case of dislocation of the spleen, with induration of this viscus,

\* In a conversation I had with H. H. Parker, M. D. (May 31st, 1849), of Brandon, Mississippi, he informed me that he had seen two cases of dislocated spleen, both being enlarged, and one indurated. The subjects were females.

came under my professional attention. The subject of it is a lady, who suffered some four years ago with intermittent fever, and also occasionally since. The spleen feels almost as hard as bone, is increased in length, somewhat in breadth, and very little, if any, in thickness. Its notched edges can be as distinctly felt, when its position is favorable, as the cartilages of the ribs on either side of the epigastrium. It rolls about in the abdomen, either on the left or right side; sometimes resting on the brim of the pelvis and pressing on the fundus of the womb. When I first saw her she was very low in health, subject to occasional attacks of ague and fever, of a pale, leucophlegmatic appearance, very much enfeebled and prostrated, suffering very much from nervous pains in the spleen, left side of the thorax, extending to left mammæ, spine, shoulder, neck, head, heart (occasionally palpitations), stomach, loins, womb. The liver was somewhat enlarged and indurated, and painful on pressure. Catamenia irregular and scanty; leucorrhœa present. I spoke guardedly encouraging to her, that she must have patience to persevere in a protracted treatment, but gave an unfavorable prognosis to her husband. Up to this time (December 16th) she has, under treatment, improved much beyond my expectations; yet, assuredly, perfect health cannot be expected so long as the dislocated spleen remains in this situation. An interesting question might here arise as to the propriety of extirpating this viscus, which is not essential to life. The danger of producing peritoneal inflammation, appears to be the principal objection. In reply to a letter which I recently wrote to Professor Dunglison on this subject, he says (Philadelphia, Oct. 28th, 1848):     \*     \*     \*     “In regard to the general question, as to the propriety of removing the spleen, I should have little hesitation in stating my opinion in the affirmative;” then, after referring to its

performance on animals, which we will presently notice, says: "And they confirm the idea so ably urged by an old friend of mine, Dr. Blundell, of London, that there is not as much danger from peritoneal inflammation in operations implicating that membrane as has generally been imagined. The history of ovariectomy has confirmed his position. Still, splenectomy on man must be a serious and most dangerous operation, and cases must be rare where it is indispensable, and, therefore, justifiable."

In his work on Physiology, after noticing the various opinions as regards the functions or uses of the spleen, he remarks, that "It is hard to say which of these speculations is the most ingenious. None can satisfy the judicious physiologist, especially when he considers the comparative impunity consequent on extirpation of the organ. This was an operation performed at an early period. Pliny affirms that it was practiced on runners, to render them more swift. From animals the spleen has been repeatedly removed, and although many of these have died in consequence of the operation, several have recovered. Adelon refers to the case of a man who was wounded by a knife under the last false rib of the left side. Surgical attendance was not had until twelve hours afterwards, and as the spleen had issued at the wound, and was much altered, it was considered necessary to extirpate it. The vessels were tied; the man got well in less than two months, and has ever since enjoyed good health. Sir Charles Bell asserts, that an old pupil had given him an account of his having cut off the spleen in a native of South America. The spleen had escaped through a wound, and had become gangrenous. He could observe no effect to result from the extirpation. T. Chapman, Esq., of Pumeah, in India, has related a case of excision of a portion of the spleen, by Dr. Macdonald, of that station. A native, about thirty years of

age, was gored in the abdomen by a buffalo, and through the wound, which was about three inches in length, a portion of the spleen protruded. Six days afterwards, the man sought advice from Dr. Macdonald, who removed the spleen with the knife, and the patient rapidly recovered.

“Dr. O’Brien, in an inaugural dissertation, published at Edinburgh, in 1818, refers to a case which fell under his own management. The man was a native of Mexico; the spleen lay out, owing to a wound of the abdomen, for two days before the surgeon was applied to. The bleeding was profuse; the vessels and other connections were secured by ligature, and the spleen separated completely on the twentieth day of the wound. On the forty-fifth day, the man was discharged from the hospital, cured; and he remarked to some one, about this time, that ‘he felt as well as ever he did in his life.’

“Dupuytren extirpated the spleen of forty dogs on the same day, without tying any vessel, but merely stitching up the wound of the abdomen; yet no hemorrhage supervened. In the first eight days, half the dogs operated on, died of inflammation of the abdominal viscera induced by the operation, as was proved by dissection. The other twenty got well without any accident, at the end of three weeks at the farthest. At first, they manifested a voracious appetite, but it soon resumed its natural standard.

“The experiments which have been made on animals by removing the spleen, have led to discordant results. Malpighi says, that the operation was followed by increased secretion of urine; Dumas, that the animals had afterwards a voracious appetite; Mead and Mayer, that digestion was impaired, that the evacuations were more liquid, and the bile more watery; Tiedemann and Gmelin, that the chyle appeared more transparent and devoid of clot; Professor Coleman, that the dogs, the subjects of

the experiment, were fat and indolent. A dog, whose spleen was removed by Mr. Mayo, became, on recovering from the wound, fatter than before; in a year's time it had returned to its former condition, and no difference was observed in its appearance or habits from those of other dogs. Similar results followed the experiments of Dr. Blundell, Mr. Dobson, and Mr. Eagle; and the last gentleman states, that an offer had been made him of a 'smart sum of money,' by a dealer in Leadenhall Market, if he would tell him his method of fattening animals."

As before remarked, it is manifestly not essential to life. Dulaurens, Keichring, Baillie, and others, refer to cases in which the spleen has been absent in man, without any apparent derangement of the functions. Dr. R. Leebby records, in the *Southern Journal of Medicine and Pharmacy* (Sept. 1846), a case of entire absence of the spleen. Another case is recorded by Dr. Meinhard, of St. Petersburg, in a German Journal.

In concluding this part of the subject, I will notice two other cases of *dislocation of the spleen*. Professor Dunglison records a case, which occurred in a lady, in his *Practice of Medicine*, Vol. I., pages 554-5. He observes: "On examining the right side of the abdomen, in which pain had been experienced, especially on change of posture, a large tumor was found extending from the hypochondriac region as far as the pelvis. The umbilical margin of this tumor could be felt distinctly lobated, as if it were shaped like the cactus. The tumor was perceptible in some positions of the patient more than in others, evidently changing its seat in the abdomen." It appears that this case was brought on by suffering from malarious disease in the State of Virginia, and was mistaken by the professor for enlargement or tumor of the right kidney. But he says: "On opening the abdomen, the tumor of the right side was found to be an enlarged

spleen, which had broken away from its attachments, and was resting with its convex surface on the brim of the pelvis, the lower extremity of the organ being turned up so as to reach the lumbar region. It was suspended by its peritoneal and vascular attachments, and could be moved freely in any direction." She was pregnant, and her confinement was somewhat premature; after delivery, she gradually sunk, until the period of her dissolution. Some years previously, in a fall from a horse, she had injured the right lumbar region. For further particulars in relation to this case I refer to his work, as there were other complications of a serious nature.

M. Bozzi, in the *Gaz. Med. de Milan*, reports a case of *descent of the spleen into the pelvis, with symptoms of subacute peritonitis and of intestinal strangulation*. The subject of it was a female, 27 years of age, with curved spine, in the third or fourth month of pregnancy. From the commencement of utero-gestation, she had been daily affected with vomiting, and, at the period mentioned, symptoms of subacute peritonitis and intestinal strangulation manifested themselves, under which, in three days, she succumbed. On post-mortem examination, the spleen was found above the right iliac region, greatly enlarged, weighing six pounds, of a black color, and resting in part on the uterus and in part on the lower portion of the ilium and the cœcum, which were very much injected. The cord of splenic vessels was twice twisted on itself, by which the return of blood by the veins was impeded, and which was the cause of the great size acquired by this viscus. The peritoneum was injected principally at the points at which the spleen pressed. Nothing was observed abnormal in the interior of the intestines. (See *Amer. Journ.*, 1847.)

I am inclined to believe that *dislocation of the spleen* occurs more frequently than is generally imagined; as

practitioners generally may not be careful enough in their examinations to ascertain its existence, and as the greater portion of the works on the practice of medicine do not speak of it, perhaps there are but few physicians who are aware that such a thing is possible. The second case, which I noticed above, for the greater portion of the last four years was under the care of several physicians, either alternately or conjointly, and, so far as I am aware, they had never detected it.

PROGNOSIS IN INTERMITTENT FEVER.—Intermittent fever is one of the mildest and most manageable forms of disease with which we are acquainted; yet, when neglected and suffered to run on, it may, and often does, more especially in the poorer classes, produce visceral and other affections, which have already been noticed, which may be protracted and difficult to cure; or these secondary affections, especially if not properly attended to in time, may become more severe, the general health more and more impaired, till ultimately death results. Professor Dickson, formerly of Charleston, now of New York, says:—

“The *general prognosis* in intermittent fevers is favorable, with some allowance for their tendency in all seasons and climates to obstinate protraction, and in hot and moist climates to malignant violence. Vernal intermittents are everywhere more curable than the autumnal: they are for the most part easily manageable, yet not without some risk both of immediate and ultimate ill effects.” Vernal intermittents are generally so mild as to have given rise to the old saying, that—

“An ague in the Spring,  
Is physic for a king.”

“It was supposed to act as ‘physic’ by expelling morbid matters, which, without its intervention, might have

been the source of more serious mischief." (*Dunglison.*) It is needless to say this opinion was erroneous. Intermittents should always be avoided if possible.

"*Particular prognosis.*—The favorable symptoms are, ready solution of a paroxysm by sweating, and completeness of the apyrexia; entire freedom from local ailment during the interval; postponement of the period of access; and diminution of the violence of the invasion. On the other hand, an imperfect apyrexia; the pertinacity of some of the local pains brought on by the paroxysm; anticipation of the time of approach; intensity of cold stage, and other symptoms of congestion; violence of determination to important organs, in the hot stage, as to the head and stomach, are unfavorable signs." (*Dickson.*)

POST-MORTEM APPEARANCES.—Dr. John P. Harrison, in the *Transylvania Journal of Medicine*, Vol. II., pages 424–5, reports the following case, which occurred in the Louisville Hospital. "Matthew Revel, native of Ireland, aged 22 years, came under my care April 11th, 1827. He has been sick seven weeks with ague and fever. There is ascites, with anasarca of the face and feet; he cannot lie on the left side; spleen much enlarged; has diarrhoea, with loss of appetite; pulse moderately full and strong. He was purged with cream of tartar and jalap; had calomel given as an alterant. After he had been in the hospital several days, discovered, in examining his thorax, some distinct evidences of hydrothorax; has now some cough. He was purged, blistered, took calomel, digitalis, squills, and cream of tartar, alternately, but no visible amendment resulted from the treatment. On the 4th day of May he died. Upon examination, a few hours after death, the following appearances of disease were seen. The abdominal cavity contained a quart of water,

and more than a pint of thick, gelatinous substance, of the consistence of paste, or starch as prepared for starching linen: the peritoneum was thickened generally; the colon and stomach were adherent; a firm and gelatinous adhesion existed between the heart and pericardium; the lungs were adherent to the pleura costalis of both cavities; the right lung was partially hepatized, and was immersed in a pint of serous fluid."

*The Blood.*—Perhaps I may remark, without submitting myself to the charge of *humorism*, that a sufficient knowledge of the *pathological condition* of the *blood*, in intermittent fever, as well as other diseases, compared with its *normal* or *healthy condition*; together with a proper knowledge of the *properties* and functions of the *nervous system*, both in *health* and *disease*, and the *relations* these sustain respectively to each other, might enable us to form a more *rational therapeutics*. But this desideratum, so difficult to obtain, being abstruse and surrounded with difficulties, which will require a great deal of patient research and minute investigations by the most devoted and ablest chemists, pathologists, and physiologists, will perhaps be retarded in its progress by some of the most prominent men in the medical world throwing the weight of their influence against them,—preferring a shorter (empirical) way of treating diseases. It may be said that this department of medicine is just beginning to dawn; and though some are now and then led astray, as might be expected in the infancy of this department, yet, it is to be hoped, that, step by step, facts, and additional facts, will be appreciated and combined; analysis lead to synthesis, and, ultimately, that a well-understood, *rational therapeutics* will be established. Of course, in connection with this subject, the *properties* and *modus operandi* of the different articles of the *ma-*

*teria medica*, in relation to each condition respectively, are to be considered. May unfading laurels crown the brows of those who devote themselves indefeasibly, assiduously, and indefatigably, to these investigations!

The appearance of the blood in intermittent fever, when drawn, differs in different cases, owing to the temperament of the patient, the inflammatory nature, complications, acute or chronic form of the disease, etc. etc. It is generally of a dark color, and more consistent than natural. In those of a sanguine temperament, and in the acute stage of the inflammatory variety, it will present a buffy appearance and firm clot. In the chronic form of ague and fever, I believe the blood is usually of a paler appearance, with a predominance of serum; and in some cases the surface presenting a greenish hue. In *splenic cachexia*, Dr. Twining says, the blood varies much in appearance; "sometimes it coagulates imperfectly, and no serum is separated; in others, the cruor is black and soft, and, after being exposed to the air, its surface does not generally assume that more florid color which we observe on the top of a coagulum of blood drawn from the vein of a healthy person; and it seldom exhibits a buffy coat, except when ardent pyrexia is present, or where the disease is attended with acute pain in the side. The serum, when heated, coagulates as firmly as that of a healthy person, but the coagulum is more friable and less tough, and it frequently has a slightly yellowish appearance; sometimes it has a greenish color."

Drs. Leonard and Foley, it appears, examined the blood in sixty-seven cases of intermittent fever, and "constantly found that, in the incipient stages of the disorder, the fibrin of the blood was undiminished, but that its quantity fell under the influence of long duration or relapses of the malady. The red corpuscles, on the contrary, are almost invariably lowered in quantity, and the

albumen of the serum, in particular, undergoes a marked diminution.”

In concluding this part of the subject, I will refer to the analysis of Charles Frick, M. D., of Baltimore, in relation to the *relative proportions of the different organic and inorganic elements of the blood*, in

“ *Remittent and Intermittent Fever*.—In the following table, the first five cases are of remittent, and the remainder of intermittent fever. Two are of the congestive form, one remittent, No. 1, and the other intermittent, No. 7. In studying the proportion of fibrin in these cases, it will be found that, in four of those classed as remittent fever, this element is above the average standard, the exception occurring in a patient, the duration of whose disease had been three weeks, and in whom all the elements of the blood, except the chlorides and the phosphates, were below their natural standard; while in five of the cases of intermittent fever out of the seven, it is below the average quantity; No. 10, one of the exceptions, being complicated with ascites, and œdema of the lower extremities, coming on as an acute affection, and being preceded by a chill; and the other being complicated with a pneumonia at the summit of the lung. It has been suggested, that the difference between these two fevers consists in the first having an acute gastro-duodenitis superadded to the second, thereby producing the gastric symptoms so common to the one, and wholly wanting\* in the other, and also accounting for the attendant fever, being of a continued type. The increase of the fibrin in these cases seems, in a measure, to substantiate this idea. The globules in the remittent form, in all except the one above alluded to, are increased, as is

\* By referring to the symptoms of *intermittent fever*, it will be seen that Dr. F. is in error in stating that *gastric symptoms are wholly absent*.

the case generally with all the pyrexia. The changes of quantity in the chlorides and phosphates are found to be nearly dependent upon the particular month in which the examination is made; and instead of being diminished, as Stephens has asserted, are, in reality, somewhat above the average in a majority of the cases, viz., nine out of twelve."

| No. of case. | Duration of disease. | Solids in 1000 gr's. | Water in 1000 gr's. | Fibrin. | Globules. | Solids of the serum. | Iron. | Lime. | Chlorides of soda and potash. | Phosphates of soda and potash. | Date of sickness. |
|--------------|----------------------|----------------------|---------------------|---------|-----------|----------------------|-------|-------|-------------------------------|--------------------------------|-------------------|
| 1            | 2d day.              | 211.780              | 788.220             | 3.456   | 128.232   | 79.920               | .592  | .179  | 4.424                         | .580                           | October 10.       |
| 2            | 5th day.             | 217.063              | 782.937             | 3.814   | 138.546   | 74.707               | .785  | .164  | 5.380                         | 1.012                          | Dec. 12.          |
| 3            | 1st week.            | 208.250              | 791.730             | 3.605   | 131.916   | 73.422               | .627  | .152  | 3.982                         | .562                           | August 1.         |
| 4            | 10th day.            | 233.500              | 766.500             | 3.260   | 137.740   | 92.500               | .762  | .223  | 5.063                         | .923                           | October 29.       |
| 5            | 3d week.             | 146.022              | 853.978             | 2.813   | 90.306    | 52.903               | .416  | .054  | 4.928                         | .778                           | Dec. 4.           |
| 6            | 16th day.            | 176.586              | 823.432             | 2.000   | 97.380    | 77.188               | .423  | .083  | 5.582                         | 1.322                          | October 31.       |
| 7            | 1st day.             | 205.310              | 794.690             | 1.777   | 122.301   | 82.766               | .524  | .223  | 3.449                         | .602                           | August 6.         |
| 8            |                      | 197.015              | 802.985             | 2.324   | 124.526   | 70.165               | .595  | .083  | 5.332                         | 1.743                          | August 24.        |
| 9            |                      | 201.059              | 798.941             | 2.656   | 125.711   | 72.692               | .613  | .296  | 4.356                         | .208                           | Nov. 12.          |
| 10           |                      | 175.338              | 824.662             | 6.250   | 97.222    | 71.866               | .446  | .192  | 3.600                         | 1.711                          | Nov. 24.          |
| 11           | 2d day.              | 207.347              | 792.653             | 3.057   | 129.772   | 74.518               | .588  | .197  | 6.396                         | 1.261                          | Dec. 12.          |
| 12           | 6 weeks.             | 186.192              | 813.808             | 4.194   | 112.756   | 69.242               | .569  | .169  | 4.828                         | .335                           | January 3.        |
| Average.     |                      |                      |                     |         | 118.484   | 72.447               | .580  | .165  | 4.797                         | .938                           |                   |

PROPHYLAXIS.—Common sense would seem to suggest to us that the most important knowledge in relation to any disease, is its *prevention*: "An ounce of prevention is worth a pound of medicine." This knowledge in relation to intermittent fever may be sought for in its causes and its endemial nature, and the general principles of hygiene. In connection with these, I am strongly impressed with the belief, that one of the most effectual means of preventing malarious and other diseases is the cold shower bath, or sponging the body all over with cold water, every morning. A resort to this means appears, to those who are not accustomed to it, to be a considerable task, and requiring a good deal of resolution; but, when once accustomed to it, these ideas disappear, and it even becomes a luxury with some.

If malarious diseases are caused by disturbances, or

excessive influence of general electricity, perhaps much might be done in the way of prevention, and even treatment, after they have occurred, by *insulating* the *beds* on which we sleep, by placing *glass* or *resin* between the floor and the lower end of the bedposts. M. Pallas, chief physician of the French armies in Algeria (a believer in this hypothesis), in a communication to the Academy of Sciences, says, a great number of observations have demonstrated to him, that all the sick who have been thus insulated have been cured or relieved of their severe diseases, many of which had previously resisted all known means of cure.

Of course, regular habits, moderate exercise, and temperance in all things, should be observed. Want of proper and sufficient amount of food, especially in newly settled countries, and amongst the poor, no doubt renders the system more liable to intermittent and other malarious fevers.

**TREATMENT.**—Simple, uncomplicated, intermittent fever is one of the most manageable diseases with which we are acquainted. It may be well to consider, in the following order, the treatment proper during the *premonitory symptoms*, the *chill*, *rigor*, or *cold stage*; the *hot stage*; *sweating stage*; the *interval* or *period of apyrexia*; and, lastly, the *chronic form*, *complications*, and *sequelæ*.

As a general rule, during the *premonitory symptoms*, give a free dose of quinine (disulphate of quinia, from 6 to 12 grains), and laudanum (25 to 50 or 60 drops), or sulphate of morphine ( $\frac{1}{3}$  to  $\frac{1}{2}$  grain), which, if it does not almost, or entirely, avert the paroxysm, greatly modifies it. A teaspoonful or two of sulphuric ether, which may be taken in half a glass of sweetened water, stirring it briskly immediately before drinking it, will have a more prompt effect, at the same time breathing or inhaling the

ether which evaporates from the glass; or some being poured on a folded handkerchief, will make the effect more prompt and efficient.

These remarks also apply to the *cold stage*, *chill*, or *rigor*. The quinine and laudanum should immediately be given. The ether usually affords great relief, in most cases immediately putting a check to this stage; but, if it is not given till towards the latter part of the cold stage, it is apt to induce determination to the head in the hot stage, especially in robust and sanguine temperaments. If it is given in the early part of the cold stage, it not only cuts it short, but usually greatly lessens and modifies the hot stage. It is stated in the *Illinois and Indiana Medical and Surgical Journal* (Oct. and Nov. 1847), that Mr. J. W. Freer, a pupil in the Chicago Hospital, has employed ether in intermittent fever, "with the most delightful results. Two or three inhalations invariably arrested the paroxysm *instantaneously*, during the cold stage, brought on diaphoresis, and, in cases where there was no unusual exertion, the paroxysms had not returned." Dr. Challenon states, that he has uniformly succeeded in curing intermittent fever, which appeared in the neighborhood of Gannat, by administering half a teaspoonful of sulphuric ether at a dose, either on the occurrence of the shivering fit, or at intervals of four hours, on the day before the attack. Several physicians in the neighborhood, had also adopted this mode of treatment with satisfactory results.\*

Either of the above plans, the quinine and laudanum, or sulphuric ether, or a combination of them, soon greatly relieves the distressed condition of the patient; greatly modifies the severity of, and shortens the cold stage, as

\* See Lond. Med. Gaz., Aug. 1847; or Amer. Journ. Med. Sci., Oct. 1847.

well as lessens the severity, and shortens the duration of the ensuing hot stage. An *emetic* of ipecac., or ipecac. and lobelia, sometimes has a similar effect, but in a much less degree. In general, however, I consider it a bad plan to give emetics, unless there are irritating matters in the stomach, as undigested food, bile, &c.; which produce retching and incomplete vomiting; as they often tend to produce gastritis, which makes the case more protracted and troublesome. If the stomach is very tender, or painful on pressure, emetics should not be given. When it is thought proper to administer an emetic, some half an hour after the emesis has completely subsided, it is generally advisable to give a dose of quinine (5 to 10 grains) and laudanum (30 or 40 drops); and, in most cases, 6 or 8 grains of calomel, and as much rhubarb, may be added at the commencement of the treatment. It should be understood, however, that the calomel and rhubarb are only admissible in those cases attended with costiveness; or at any rate they should not be given where there is a disposition to looseness or diarrhoea.

It is quite common to apply warmth to the extremities, by means of warm rocks, bricks, irons, bottles filled with hot water, or ears of corn just taken out of boiling water. Perhaps the latter is preferable to the others. I do not, however, place a very high estimate on these adjuvantia, nor am I very particular in attending to them, unless the patient desires them, is feeble, or the chill protracted.

I have never resorted to *venesection*, in the cold stage of intermittents, as has been recommended by Drs. McIntosh, Twining, and some others with less confidence.

As cold water is very much desired by most patients in this stage, I consider it advisable to allow them small quantities, often repeated.

In those cases in which the chill and fever come on

together, give a dose of morphine, and pour cold water freely over the head and neck, and if the reaction or the excitement is considerable, it should then be poured over the whole person. This affords great and almost immediate relief. Sometimes, in athletes, and those of full, sanguine temperaments, in which the excitement is considerable, with determination to the head, it may be advisable to resort to venesection; but this may generally be dispensed with, by pouring cold water freely and repeatedly, first over the head and neck, and then over the whole body. To relieve the distressing nausea and vomiting that sometimes attend the cold stage, laudanum or paregoric should be given; for children, the latter should have the preference; and of course, the above remedies recommended for the adult, should be modified so as to adapt them to the different ages of children; mustard, or warm brandy, or whisky and peppermint may be applied over the stomach.

*The Hot Stage.*—If the above means have been attended to during the cold stage, the *hot stage* is generally rendered so mild as to require but little attention. If, however, the reaction should be very great, with determination to the head, as indicated by flushed face; redness of the eyes; throbbing of the carotids; derangement of the mind, in some cases amounting to delirium; and pain in the head; it may usually be controlled by pouring cold water freely, frequently, and copiously, over the head and back of the neck, and sponging the whole person freely with cold water. In the sanguine and robust, if the pulse is hard and bounding, and some important organ is likely to suffer from the excitement, venesection should be resorted to at once. As before remarked, however, this excitement can generally be

controlled by pouring cold water freely over the head, neck, and then over the whole person.

During this stage, it is commonly not necessary to give much medicine. Some cooling diaphoretic is generally sufficient; as, the common effervescing soda, or Seidlitz powders; lemonade, iced water, or cold water, etc.

If the patient is not seen till the development of the hot stage, in addition to the above directions, it may be necessary to give a dose of morphine ( $\frac{1}{3}$  or  $\frac{1}{2}$  grain), with two grains of ipecac., or a teaspoonful of tincture of lobelia, if the stomach is not irritable and disposed to vomiting. If the pulse is rather feeble, as well as frequent, which is not unfrequently the case, laudanum should be given, with a free dose of quinine. If the hot stage should be protracted, or seem disposed to assume the remittent form of fever, the quinine and laudanum should be given, to which calomel and rhubarb, or some other aperient, should be added, if there is costiveness, or the bowels are not disposed to looseness. Small doses of quinine, as two or three grains, should not be given during the hot stage, as it adds to the excitement, while large doses act as sedatives and tend to soothe; and this effect may be encouraged by the addition of morphine and ipecac., and the free use of cold water applied externally, together with the internal use of cold or iced water; and, in those violent cases demanding it, venesection. If the skin is hot and dry, the patient oppressed and restless, the external application of cold water, as above advised, affords, either alone, or in combination with the other means above noticed, such prompt and decided relief, and so greatly shortens this stage, that it is surprising that it is so seldom resorted to.

*Sweating Stage.*—During this stage, generally little or no treatment is demanded. Light covering, such as

is agreeable to the feelings of the patient, and avoiding cool currents of air, or exposure to too low a temperature, is advisable ; as exposures of this kind, or too great exertions, might bring on a second chill. Cold drinks should not be used as freely as before. If the case occurs during the prevalence of an epidemic, in which there is a great tendency to assume or run into the congestive or remittent form, we should administer quinine at once, as, by waiting for this stage to pass off, we might lose important time ; as it might soon be succeeded by a rigor of the congestive form. Ordinarily, however, this is not to be expected.

*Period of Apyrexia.*—This is the most important time for arresting the paroxysms of intermittent fever. It will generally be sufficient to administer quinine in from three to five grain doses, four times a day ; and it is usually a good plan to add from half a grain to a grain of sulphate of zinc (white vitriol) to each dose of the quinine. To be more certain to avert the next paroxysm, about two hours before the usual time of its recurrence, take six or eight grains of quinine, with thirty, forty, or fifty drops of laudanum. This is more especially advisable when the chills are of the quartan type. This means almost invariably prevents the paroxysm which would ensue. If the bowels are not disposed to be open, give with the first dose of quinine, five or six grains of calomel and eight or ten grains of rhubarb, or, what is in most cases preferable, two, three, or four pills of the extract of the white walnut, or butternut (*Juglans cinerea*) ; extract of taxaracum and rhubarb ; or the decoction of black root (*Culver's physic*). If quinine causes roaring in the head, or buzzing in the ears, the dose should be lessened to three or four grains. This is a much better way, more effectual, and less likely to produce *quininism*, than the

old habit, and which is yet practiced by some, of giving one or two grains of quinine every hour or two. Large doses of quinine also tend to resolve hyperæmia, congestion or inflammation of important organs, while small ones tend to increase these local affections. These conditions also more especially demand the use of some of the above cathartics; but they should not be given too freely nor too frequently. When more than one dose is required, the next one should not be given till about twenty-four hours subsequent to the administration of the first one. They should usually be taken at bed-time. In cases that are disposed to costiveness and protraction, it may be necessary to give them occasionally subsequently. A favorite remedy with some practitioners, in cases of this kind, is pills composed of quinine, blue mass, and oil of black pepper, or piperine.

Though calomel and blue mass may be of service, especially when there is local inflammation of some important organ, if administered with judgment and care, yet, I am opposed to their too frequent and indiscriminate administration, as their too liberal use often produces a deleterious influence on the system, which is lasting: I rarely give more than one or two doses of either of them, and that about the commencement of the treatment. If it is necessary after this to use aperients, I commonly prefer some of the others above mentioned. Indeed, in a very large majority of cases, calomel or blue mass need not be given at all; some of the other articles sufficing when one is indicated. Not only are calomel and blue mass used too freely and indiscriminately, and often to an injurious extent by some young practitioners, but perhaps more generally by old ones who received their medical education many years ago, when calomel was considered *the great remedy*; and also by those who have recently arrived from the North; but they are used too

freely and indiscriminately by many southern practitioners, as well as by many of the people themselves, in certain parts of the country.

Intermittents, in the more northern portions of the world, are, perhaps, more of an inflammatory nature than in southern latitudes, and require greater attention to antiphlogistic treatment.

Some of the articles to be mentioned presently, or hereafter, may be used instead of the quinine, and this should more particularly be attended to in those cases where quinine is known, or found, to disagree. In some persons, it is apt to produce unpleasant effects on the brain. (See the chronic form below, and also Chapter XVI.)

*Chronic Form.*—When intermittent fever is protracted, or suffered to continue, till it assumes what we may call the *chronic form*, the patient usually becomes more pale, frequently leaner than usual, but is also frequently apt to present some embonpoint, is more or less bloated, and frequently of a pale tallowish appearance, and perhaps anasarcaus. In many of these cases, the stomach and system seem to lose their ordinary susceptibility to the influence of quinine; hence, it becomes necessary to combine other remedies with it. Many persons, who are not aware of this, become dissatisfied with the quinine, abandon it, and seek for other remedies. One of the best combinations, in these cases, is quinine (4 to 6 grains), carbonate of iron (10 or 15 grains), and pulverized capicum (cayenne pepper, 4 grains), which is to be taken (incorporated with molasses, syrup, or wet with spirits) at a dose. A dose of this should be taken every four hours, so as to take three or four doses before the usual or expected time of the recurrence of the chill, which is almost sure to avert it; or what makes it more certain, the addition to a dose, about two hours before the ensuing

chill time, of thirty to fifty drops of laudanum. The following formula is also an excellent combination in obstinate and protracted cases, and more particularly adapted to those who have a somewhat florid appearance :—

|                        |                     |
|------------------------|---------------------|
| R. Sulphate of quinine | forty grains ;      |
| Sulphate of zinc       | twelve grains ;     |
| Water                  | five fluid ounces ; |
| Elixir vitriol         | forty drops.        |

First dissolve the quinine in the water by the addition of the elixir vitriol, or a few drops of sulphuric acid, then add the zinc. Dose, two or three teaspoonfuls, four times a day ; and, after the chills have been arrested, it should be taken four times the ensuing day ; three times a day for the next three or four days ; then twice a day for four or five days, to prevent a relapse. If the chill is of the tertian or quartan type, the medicine should be taken four times a day, till the next regular chill time passes, after which it may be used less and less frequently. This means not only tends to prevent a relapse, but contributes as a tonic, to restore the lost vigor and healthful condition of the system. These suggestions should also be carried out, when the quinine, iron, and pepper, above recommended, are used. In some cases, after the chills have been arrested, the continued use of the above remedies sometimes disagree with the stomach, in which cases some other tonic may be substituted ; as, infusion or tincture of dogwood, cherrytree, and poplar bark ; or an infusion or tincture of the leaves of the wild holly (*Ilex opaca*), Peruvian barks, quassia, gentian, etc. etc.

In those cases in which there is a strong proclivity to relapse frequently, and in which the features have rather a florid (which is more apt to be the case with the athletic and sanguine temperament) than a pale tallowish appearance ; after warding off the paroxysms by the means above noticed, it is sometimes a good plan to give Fow-

ler's solution, as, in these cases, there is generally some visceral disease; the arsenic acting in a similar manner to a combination of quinine and calomel or blue mass, curing both the ague and fever, and the visceral affection, at the same time. It may be given for a fortnight, or three weeks, as in the following formula:—

|                      |                                     |
|----------------------|-------------------------------------|
| R. Fowler's solution | three teaspoonfuls;                 |
| Water                | four ounces and three teaspoonfuls; |
| Laudanum             | two teaspoonfuls;                   |
| Creasote             | ten drops.                          |

Mix, and shake well before taking. Dose, one teaspoonful three or four times a day. It may be necessary to use some of the aperients before noticed, as occasion may require, twice or thrice a week. Of course, much will have to depend on the judgment of the practitioner, in each individual case, with regard to the length of time and the repetition of these remedies. If the arsenic has an unpleasant effect on the stomach, or produces its peculiar effect on the system, as indicated by swelling of the eyelids and face, and a feeling of stiffness in these parts, itching of the skin, tenderness of the mouth, loss of appetite, it should be suspended. It, however, very seldom produces these effects, when given as above directed. It should be given with care and judgment. I generally prefer the following formula to it.

|                                  |               |
|----------------------------------|---------------|
| R. Quinine                       | sixty grains; |
| Sulphate of zinc                 | forty grains; |
| Tincture of sanguinaria Canaden. | four ounces;  |
| Water                            | one ounce;    |
| Elixir vitriol                   | sixty drops.  |

First mix the tincture of the puccoon root and the water, then put in the quinine, shake the mixture, and add the elixir vitriol or a few drops of sulphuric acid, and, lastly, add the white vitriol, and shake the mixture. Dose, for an adult, from 40 to 60 drops three or four times

a day. When it is given more particularly for the purpose of preventing a relapse, a dose three times a day may suffice.

When intermittents are attended with *diarrhœa*, opiates, or opiates and astringents must be given to stop this profluvia. Paregoric, laudanum, opium, or any of these combined with sugar of lead, catechu, krameria, infusion of oak bark, nutgalls, or other astringents, will generally, or perhaps invariably, fulfil this indication. If the discharges should be frequent, copious, and obstinate, a teaspoonful of laudanum should be given by injection, mixed with a fluid ounce of starch or flour gruel, or water.

*The Cold Douche, or Shower Bath.*—Considering the potency of this means of curing intermittents, it may be considered somewhat surprising that it is so seldom resorted to; and not only is it effectual in curing ague and fever, but those nervous affections and visceral engorgements which so often complicate, attend, or are the sequelæ of this disorder.

The *cold shower bath*, *cold dash*, or, for those who are too feeble to bear either of these, *sponging* the body with cool or cold water, should be resorted to early every morning, or at least some two or three hours before the time for the ensuing chill. After the chills have been arrested, this means should be resorted to every morning for two or three weeks afterwards, to prevent relapse, and to act as a tonic in regaining the lost tone and vigor of the system; indeed, it is advisable to use it throughout the season. This may be used alone, or in conjunction with the remedies recommended above, for the cure of the chills, and to prevent relapse, as well as to act as a tonic. The external application of the cold water should not occupy a longer time than from one to

two minutes, as its prolonged application might have an effect contrary to that which was intended. Those who prefer it, may plunge suddenly into an adjacent stream, but they should immediately leave the water, and dress themselves.

In corroboration of some of the above statements, I will refer to a memoir presented to the French Academy of Sciences by M. Fleury, on *the use of cold douches in the treatment of intermittent fever*.

“He\* was led to these researches by the assertion of Dr. Currie, that the accessions of ague might be prevented by the affusion of cold water, and that, by its repetition four or five times, the disease might be entirely cured. M. Fleury has employed this means one or two hours before the expected paroxysm, in the form of a general douche, and in that of a local one to the region of the spleen.

“The ends attained by the above plan he believes to be: 1. A shock exerted on the nervous system, and on the general capillary circulation. 2. The opposing of a vigorous reaction and general stimulation of the surface to the cold stage of the fever. 3. A modification of the circulation of the spleen, combating congestion of that organ.

“He has pursued this treatment in eleven cases of intermittent fever. In seven of them the disease was recent, and there had been but from three to seventeen paroxysms; quinine had not been administered in any one. In two cases, the spleen preserved its normal size; in five, it was enlarged; a cure was effected in all. In one, a single douche sufficed to cut short the fever. In two others, two affusions were necessary to do so,

\* I take the above from the American Journal of Medical Sciences, Oct. 1848. It may also be found in several other medical Journals.

and to restore to the spleen its natural dimensions. In the remaining four, affusion was practiced three times.

“In those patients where two or three douches were used, the effects produced were constantly the same. By the first application, the accession was retarded two or three hours; the rigors less violent and shorter by one-half or five-sixths the time; the heat and headache were equally lessened; and the total duration of the fit was diminished by at least one-half. Age and the type of the fever did not exercise any appreciable influence over the effects of the treatment. Where, however, the volume of the spleen was larger, the time required for the cure was augmented. Four patients had suffered from the disease for from two to eleven months, having had several relapses, and resisted the action of sulphate of quinine, and presented the anæmia, emaciation, anorexia, etc., seen in those who have been long affected by ague. Three douches were required in two of these cases, and five in one other, to remove the fever; but from eight to eleven were necessary to cause the splenic engorgement and the cachectic symptoms to disappear. In one case the liver was very greatly enlarged; but this condition disappeared by perseverance with the affusions.

“M. Fleury arrives at the following conclusions: 1. In the treatment of recent intermittent fever, simple, and with little or no engorgement of the spleen, cold douches may be substituted for quinine. 2. In the treatment of old-standing ague, where several relapses have occurred, and there is considerable enlargement of the spleen, or of the liver, with a cachectic condition, cold affusions are to be preferred to quinine; for they cut short the fever, restore the viscera to their natural volume, and remove the cachexy more rapidly and more safely than quinine; the latter, in large doses, not unfrequently acting injuri-

ously upon the nervous system, or on the digestive organs."

When this cachectic condition attends, I feel assured that, besides using the cold dash, a dose composed of carbonate of iron, six or eight grains; quinine, two or three grains; and pulverized capsicum, two or three grains, should be given three times a day, till the health of the individual is restored.

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### CHAPTER III.

#### CACHEXIA.

UNDER this head may be considered several analogous affections, presenting respectively some peculiarity: as, *anæmia* proper; *hydro-polyæmia*, or *serous polyæmia*; *chlorosis*; *dropsy*. In connection with either of these, some local disease may be more manifest than another, or several of the viscera may be about equally affected: amongst these we may mention the *spleen* (hence called by Dr. Twining "*splenic cachexia*"), *liver*, *womb*, *bronchia* (chronic bronchitis), *lungs* (consumption, etc.), *heart*, *stomach*, and *bowels* (frequently atonic dyspepsia). Spinal irritation, and a variety of neuralgic affections, may also attend.

Notwithstanding this family of diseases, with some exceptions, is generally easily managed, yet, for want of properly appreciating the nature of these variously modified conditions, and a corresponding adaptation of treatment, malpractice, to a woful and almost unlimited extent, has brought no small amount of opprobrium on the profession, and consequently driven hundreds and thousands

to seek relief from quack nostrums (which they have used, one after another, accordingly as some puffing and lying or forged certificate happened to fall in their way), which usually makes their condition worse; perhaps, nearly all of them contain some opiate, which gives the sufferer temporary relief, and which induces him to fancy himself better, while it is but a syren to lead him more certainly to the tomb: or perhaps he is driven to *homœopathy*, a sort of *nonsensical refined monomania*, which is practiced (or pretended to be practiced) on the gullibility of the credulous, and which every philanthropist, friend of science or humanity, should discountenance. Nor, under these circumstances, should we be surprised at the temporary popularity of "*steam doctors*;" another wide-spread delusion which swept across our country some years ago. But to these evils, allopathy, or eclectic medicine, is indebted to some extent, for their salutary influence in correcting, or tending to correct, some of the abuses in practice among the regular profession. And here I will remark, with due deference to the intelligence and ability of northern physicians, with regard to the diseases of their own climate, that southern practitioners have been too long looking through northern spectacles, with regard to this family of diseases. I believe it is almost a universal custom with a large majority of southern practitioners, and the people generally, when they see an individual affected with any of these cachectic conditions, to remark that he or she, as the case may be, has "*the liver complaint*;" and conclude, as a matter of course, that calomel and blue mass must be given, as these are *the* remedies for all diseases of the liver. This error has been, and is still one of the greatest curses to the people in the malarious regions of the South; and, as before remarked, has brought considerable opprobrium on the profession, as such treatment not only makes the

general condition worse, but increases the existing organic affections, as well as tending to develop local diseases elsewhere;—as, for instance, if the spleen or liver is primarily affected, the continued use of mercurial preparations will not only increase this organic affection, but is almost sure to induce disease of the lungs, womb, heart, stomach, etc. etc., which become very stubborn, perhaps incorrigible, and the patient is doomed to drag out a more or less protracted and unpleasant or miserable existence.

Connected with these considerations, the abuses by fashionable dressing, the employment of ignorant midwives, improper mode of living, and a warm, relaxing climate, make these curses tell most heavily on females, in diseases of the womb;—as chronic inflammation, induration, and enlargement; prolapsus; tumors; inflammation or ulceration of the neck of the womb, and leucorrhœa; disturbance of the menstrual functions; and also in pulmonary affections; atonic dyspepsia; spinal irritation, and neuralgias of various kinds. In many cases of chronic ague, which have lasted for a long time, or the chills may have disappeared, or recur occasionally, and, I believe, more especially, if calomel or blue mass has been given for a long time, there is enlargement and induration of the spleen, and also of the liver, but generally to a less extent.

Those afflicted with these cachectic maladies, present a pale appearance resembling the color of tallow, in some cases slightly tinged with a yellowish hue; the sclerotica, or white of the eye, is unusually white. They may be leaner (anæmia) than natural, or they may present a bloated appearance or fulness of the face and abdomen (serous polyæmia), while their limbs may be thin and flabby; or there may be a general dropsical appearance

(anasarca); in some cases, ascites being most prominent; in others, hydrothorax, or hydrocele.

In corroboration of some of the above statements, and for farther observations on this subject, I will refer to some remarks by R. E. Little, M. D., of Quincy, Florida. He says: "Strangers visiting the southern States, are astonished at the number of pale and bloated faces to be seen, especially among children, faces which attract but little notice from the inhabitants of the country, so long have they been regarded as the result of *an unhealthy location* (malarial), or a *deranged liver*, the latter being the commonly assigned cause. To neither of the above causes, we venture to assert, are they to be attributed—save in a very few cases—an assertion which we are assured will be seconded by a majority of the well-informed and observant members of the profession.\* During our residence in Florida, we have been called on to treat many cases of what we have denominated serous polyæmia. \* \*

"Symptoms of disease are manifested not only in the appearance of the countenance—pale and bloated—but also in the contour of the body, the abdomen large, limbs emaciated, and muscles inelastic. The physical appearance of the patient, to an experienced eye, indicates the true character of the disease. The slightest exertion produces difficulty of breathing, increased action of the heart, and in a very short time pulsations in many of the larger veins are perceptible, particularly in those of the neck. The face has a cadaverous appearance, the eyes lose their accustomed brilliancy, suffusion of the cheeks rarely appears, and when it does it is circumscribed: in

\* It may be proper to remark, that this cachectic condition is not unfrequently primary in certain localities, while in others it is most frequently the sequelæ to malarious diseases.

short, the intellectual manifestations (physically) are in a great measure wanting. In the early stages of the disease, the pulse is usually small and feeble, occasionally intermittent, but as the disease advances, it is apt to become full, and convey, when felt at the wrist, an idea that the finger is placed on the femoral instead of the radial artery, a phenomenon which disappears, however, a short time before dissolution. The appetite is capricious, at one time ravenous and desiring articles not *usually* esteemed luxuries, such as paper, leaves, and buds of trees, pieces of slate, red clay, &c., while again the stomach revolts at anything presented. The breath is fetid, the bowels loose and constipated by turns, and the discharges of an ash color. Not unfrequently, before death, a dropsical accumulation occurs in one or more of the great cavities of the body, and occasionally it is universal.

“ But the most remarkable features of the disease are the peculiar sounds given out by the larger blood-vessels, both veins and arteries. Bouillaud says, that if the ear be applied over an artery, a dull *rubbing* sound may be heard; though feeble, it may be distinctly detected. Aware of this fact, the sounds attendant on the disease in question, when recognized in one of the first patients which came under our care, were not deemed altogether unnatural, but subsequent examinations convinced us, that they were louder and longer than those given out during a state of health, and consequently the result of disease. In every case since treated, stethoscopic examinations have been made, and we regard such sounds as being almost certainly indicative of the existence of serous polyæmia, as they are to be heard very rarely under any other condition either of the blood-vessels or the blood itself. V. S., a boy fifteen years of age, a native of South Carolina, but for the last six years a resident of

Florida, presented himself to us as the subject of 'liver complaint.' His physical appearance at first sight indicated the nature of his disease. A walk of a mile had almost completely exhausted him. His breathing was hurried; pulse 130 and full, the carotids beating so violently as to be visible at the distance of twenty or thirty feet; abdomen large, limbs emaciated, and his face of a cadaverous appearance. He lamented his indisposition to apply himself to any steady employment. A stethoscope was applied to the precordial region; the *bruit de soufflet* was distinctly heard, inexperience leading us to imagine the existence of a contracted state of some of the cardiac orifices. The same sound was heard over the course of the carotid and femoral arteries. At a subsequent examination, the *bruit de soufflet* failed to be heard in the precordial region, although it was still clearly to be distinguished in the arteries. In the first instance, the patient had been taking exercise on foot: in the latter, he had abstained from exercise for a day or two. A majority of the cases have exhibited the same symptoms in a greater or less degree, the *rubbing* sound disappearing gradually as the health was restored."

It may be proper here to remark, that be the nature of the disease whatever it may, if there is a diminution in the amount of the globules, this *bruit de soufflet* may be heard in the carotids. M. Andral has observed, "that, in different persons, the arterial *soufflet* does not always appear with the same degree of depression of the proportion of globules. He considers, however, that the following rules exist on this subject. *First*. When the ratio of globules has gone below 80, the *bruit de soufflet* exists in the arteries continuously. To this law he has not seen an exception. *Secondly*. When the globules remain above 80, the *bruit de soufflet* may still exhibit itself; but it is no longer constant. It is still heard, when the pro-

portion of globules varies between 80 and 100; and occasionally when it is above 100." (*Dunghlison*.)

While speaking of the sounds afforded by auscultation of the blood-vessels, I will refer to the following remarks made by Professor Dunghlison, when speaking of *chlorosis*: "One of these has been termed *bruit de diable*, in consequence of its resemblance to that of the *diable* or humming top of children. It is heard most frequently along the carotid and subclavian arteries; at times, also, in the crural arteries, but never to the same degree. Commonly, it is heard on one side only. The *bruit de diable* disappears immediately on compressing the artery below the part at which it is heard; it disappears, also, on pressing the artery forcibly with the stethoscope; and, what is surprising, the *bruit* often appears and disappears from one minute to another, without our being able to detect the cause of these alterations. At times, the mere change of the patient's position is sufficient to effect this." Dr. Little, in his remarks on Serous Polyæmia says: "The loudest sounds are heard in those vessels nearest the centre of circulation, for instance, in the subclavian and carotid arteries. There is frequently a difference between the right and left carotids, the left giving out the loudest sound, which is capable of being increased by pressure moderately applied, or entirely stopped by compressing the vessels between the point where the ear is applied and the heart. Position also influences the intensity of the bruit, an erect posture increasing, a recumbent diminishing it. It is always heard most distinctly when the larynx is in its natural position; drawing it to the opposite side diminishes it, frequently entirely destroys it." M. Raciborski says, that the *soufflement musical* is more frequent in thin and nervous persons affected with chlorosis; and the *bruit de diable*, in the stouter. The *bruit de diable* has been observed after

copious blood-letting, but disappearing when the blood has regained its properties by the use of tonics.

“From an analysis of 88 cases of anæmia, in which there was a continuous or intermittent sound heard over the carotids, M. Andral has endeavored to establish a ratio between the diminution of the globules, and the appearance of such sound. Of the 88 cases, the *soufflet* was continuous in 56; intermittent in 32. Of the 56 cases in which the sound represented the *bruit de diable*, in 28 the proportion of globules was not above 80, and descended as low as 21; in 13, the ratio was between 80 and 100; in 10, it rose to between 100 and 115; and in 5, it rose from 115 to 125. In the 32 cases in which the sound was intermittent, there were only 3 in which the proportion of globules was below 80 (76, 77, 77); 13 from 80 to 100; 8 from 100 to 115, and 8 from 115 to 126.

“The intensity of the sound is generally in a ratio with the degree of diminution of the globules. In 22 cases of chlorosis, Andral found it intermittent in 8, the proportion of globules oscillating between 117 and 77; continuous in 14, the proportion of globules varying between 113 and 28.

“When blood is drawn in chlorosis, it commonly possesses the qualities referred to above. It is thin, light-colored, and deficient in red particles. The clot is of less proportion to the serum than in health. To the deficiency of red particles are assigned the diminished temperature of the surface, the pallor and waxy appearance, as well as the want of color in the catamenia, and the pale stain, which the blood, in cases of epistaxis, leaves upon linen.

“Some analyses have been made of chlorotic blood. In two well-marked cases, referred to by Dr. Babington, it contained 871 and 852 parts in 1000 of water, instead

of 780, the healthy standard; and the coloring matter amounted to 48.7 and 52 respectively, instead of 127. The albumen and salts were in the usual proportion. In other cases, which occurred to different observers, the following were the results:—

|                     | Cruor. | Serum. | Fibrin. | Water. | Iron. | Total. |
|---------------------|--------|--------|---------|--------|-------|--------|
| 1. Chlorotic female | 83.70  | 83.45  | 6.35    | 832.45 | 4.35  | 1000   |
| 2. Healthy do.      | 134.00 | 88.20  | 25.70   | 743.90 | 8.20  | 1000   |

“As a general rule, it may be inferred from the experiments of MM. Andral and Gavarret, the proportion of red particles is diminished, whilst that of the fibrin remains the same; so that the clot, although small, may be firm, and it not unfrequently exhibits the buffy coat. In extreme cases of the disease, the red particles have been found as low as 27.

“In two cases of chlorosis observed by M. Andral, the condition of the globules seemed to be modified. They were much smaller than usual, and some of them appeared broken, as it were, and scattered in fragments in the field of the microscope. In one of the cases that recovered, he had an opportunity of noticing the condition of the blood in health, which presented perfect globules, very different from those he had observed some months previously. In uncomplicated chlorosis, the proportion of globules has been found as low as 38; but, generally, it is about 50.” (See *Dunghlison's Practice of Medicine*, Vol. II.)

It appears that in all these cachectic conditions, there is a superabundance of water in the blood, on which, it seems, depends the peculiar sounds of the larger blood-vessels; the globules are also as uniformly diminished, as we have already seen, their normal proportion being 127 in 1000.

Dr. Little observes: “The blood drawn from patients laboring under serous polyæmia, after being allowed to

stand for a short time, shows a very large amount of serum, with a corresponding diminution in the quantity of crassamentum, a state of things which we all know must exist, when regard is paid to the elements which are used in its formation. To organic chemistry are we indebted for a knowledge of the influence possessed by physical laws over vital phenomena. No one, at all acquainted with the late discoveries in chemistry, will for a moment deny the necessity of the inorganic elements of food, and to a partial absence of these, is in a great measure to be attributed the existence of serous polyæmia among children in some parts of the southern country. In the northern part of Middle Florida (in which we reside), the soil is deficient, to a great extent, in calcareous matter, and here lies the foundation of the evil. The principal breadstuff of the inhabitants is Indian corn (which, under any circumstances, contains less lime than wheat), and as vegetable matter is influenced in its constituents by the character of the soil on which it is grown, it is obvious that maize cannot be well adapted to the nutrition of the system, wanting as it is in calcareous matter. The same may be said of all other vegetable matter growing in the country. Inferior animals, feeding on such material, in a very short time feel the effects of a diet destitute of inorganic elements; they consequently seldom attain their natural growth, and are wanting in that soundness which characterizes those of their species which luxuriate in the pastures of a region rich in calcareous matter, matter essential to the nourishment of the system. The diet of persons inhabiting a section of country partially destitute of some of the inorganic constituents of the human body must, after a time, produce a derangement in the animal economy, the derangement being sooner manifest in the young than in the adult subject, and to a much greater extent. This is manifest in our own im-

mediate neighborhood; very few of the natives of the country are over twenty years of age, their parents having emigrated principally from the Carolinas. Many of the former suffer greatly from the use of food destitute of inorganic elements, indicated by their pale and bloated faces, while the latter, having emigrated after a full development of the system, muscular and osseous, and, consequently, not demanding, so imperatively as their offspring, a supply of mineral matter for a healthy action of their system, suffer comparatively very little. Experiments, instituted by Chossat, demonstrate the necessity of graminivorous animals being supplied with lime. Pigeons which he supplied with wheat, an article containing but about 2.80 per cent. of lime, became, after a time, emaciated, and finally died, but when lime was added to their food, they increased in plumpness. The bones of those that died exhibited a brittleness not at all consistent with a healthy state of the osseous system, a state of things frequently met with, in the human subject, during that period when the process of ossification is going on most rapidly. Dr. Le Conte, in an article recently published on geophagy, mentions, in confirmation of the necessity of inorganic elements in the food of all animals, that the cattle, in one of the counties of Georgia, subsist on a species of grass destitute of phosphatic or calcareous matter; and, that as a substitute for these principles in their food, are in the habit of chewing bones, which they do with the head elevated, to prevent the saliva from flowing from the mouth, until the bulk of bony matter is reduced to a very small size, when it is rejected, as being of no further service. These cattle are lean and of diminutive stature. Removal to a section of country with a different geological formation, does away with the habit, a habit the result of instinct. Upon the same principle may be explained the tendency in

some children and pregnant women to dirt-eating, nature urging them thus to supply the deficiency of, or increased demand for, calcareous and saline ingredients in their ordinary food, a habit which experience has proved may be indulged in, to a certain extent, without invariably causing disease, especially if the subject of it be not confined to a limited number of articles of diet. We are more and more convinced, from daily observation, of the truth of the experiments of Magendie and others, in regard to the necessity of a variety in diet. In the families of those who are in the habit of varying the diet from time to time, cases of serous polyæmia are rare, while in others, where the same articles of diet are used for months in succession, the disease is common." (See *Amer. Journ. Med. Sci.*, April, 1846.)

Since writing the above, I have to-day (May 25th) seen the following very interesting case, about seventeen or eighteen miles south of Hillsboro', Scott county, Mississippi. The historical part was given me by her mother.

Miss Miranda Goodson, aged 15, pale, or leucophlegmatic appearance; has always been so; her system is imperfectly developed, or, in other words, she is badly grown. Was taken about the 26th of January, 1849, on Friday, with pains in her hands and fingers, feet and legs. On the ensuing Monday morning, the pains became very severe; the extremities were cold and swollen, and dark purple spots appeared on the backs of the hands, on the feet and back part of the legs, which turned black in a few days. Three weeks after this, the dark spots increased in size, and the extremities began to rot off. In five or six weeks, the right hand first came off above the wrist, and soon after both feet came off above the ankles, the right one the highest up. The thumb of the left hand, and the index finger at the middle

joint, also sloughed off. A dark spot appeared on each cheek, and one on the end of the nose, which ulcerated, but all of which are now cicatrized. Ulcers also came on the back part of both arms, extending from the elbow to near the shoulder, which is at present healing. There are ulcers on her knees. The ends of the stumps are healing, being now nearly or quite healed over. The ends of the bones were sawed a little, by Dr. Heslep, but, being as thin as egg-shells, easily broke away or crumbled off. Her spleen has been enlarged three years, and she complains of pain in it occasionally, which was the case before she was taken sick. She has had fever several times, but never ague and fever. She has spinal irritation, tenderness on pressure from the lower part of the neck to the lower portion of the loins, being less manifest in the lower portion of the dorsal region. She is now restless at night. When she draws a long breath every bone pains her, and feels as though it would burst. The tendons on the back of the knees are contracted and firm, and the legs bent; she can flex and extend her legs a little. There are some watery blisters on the back of the legs just above the ulcers, which latter extend some distance up the back part of the legs. She has pains in her loins, which are much more intense once every month. She has never had her catamenia. Her mind is much impaired, recollecting nothing that transpired during her sickness, till about two weeks back; though she still recollects things previous to her sickness. She appears to be improving a little.

On the Saturday succeeding the Monday on which she was so violently taken, she had convulsive fits, which lasted till Sunday, about noon. She was at this time cupped and blistered on the back of the neck. She was bled on the Monday she was so violently taken; but little, however, could be procured or drawn, and what was ob-

tained was very watery, and would scarcely stain linen. She has taken opium, but it procured but little relief of pain and restlessness. One attendant physician gave her a few blue mass pills. Her eyes were naturally blue; during her sickness they turned black, but are now becoming blue again. In the severer periods of her sickness, the pulse was many times scarcely perceptible.

*Remarks.*—The parents of the above girl are poor, and living in a poor, sandy, piny region of country. The condition of her system is manifestly referable to a want of inorganic elements—to a want of proper and sufficient nourishment. In this region of Mississippi, cattle, and even hogs, instinctively chew bones, in order to obtain calcareous and phosphatic matter, which their food here does not supply in sufficient amount. It is said, that when they are removed to a region of country where there is limestone water, and where the land is much more rich and productive, they quit the custom of chewing bones. It can be observed in the complexion or pallid appearance of many children, and some grown persons, in this region, that the system is wanting in inorganic compounds; as, lime, iron, etc.

In conclusion, I will mention an interesting circumstance which occurred in a cow, belonging to Wm. Chambers, Esq., of Hillsboro', Mississippi. The fact was communicated to me by Mrs. Chambers. In the spring of 1848, the cow's tail rotted off some distance from the root. The cow appeared to be in bad health, and her hair very rough. She has since been observed to chew bones for two or three hours in the morning. I have seen her at this myself.

When the watery portion of the blood so largely predominates, connected as it is with debility, relaxation, or flabbiness or softness of the *flesh*, and especially if some visceral disease exist, need we be surprised that *dropsical*

*effusions* take place into the different serous cavities, or into the cellular substance, producing anasarca, hydrothorax, ascites, hydrocele, hydrops pericardii, etc.?

The *chronic bronchitis*, which not unfrequently comes on during this *cachectic* condition, will receive attention when we come to notice its treatment, as will also hæmoptysis, etc. etc.

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## CHAPTER IV.

### TUBERCULOUS CACHEXIA—CONSUMPTION, &c.

THE limits of this work will not allow of a full consideration of this very important subject. I hope, however, that the brief consideration which we may give to it, will not be without profit to those who may feel interested enough to carefully peruse it. Considering the grave character of *tuberculosis*, and the large amount of the human family that suffer from it, it is certainly one of the most important subjects belonging to the whole domain of medicine; and though more common on some portions of the globe than others, it may, in the language of Professor Bartlett, with respect to consumption, be regarded as the “endemic of the world;” manifesting itself in the torrid, temperate, and frigid zones; and in the different races, ages, sexes; and also amongst some of the lower animals.

There are *modifications in tuberculosis*, or *tuberculous cachexia*, and different names have been given to indicate, or as referable to these modifications, and to the deposit of tubercular matter in certain parts. The most important of these is its deposit in the lungs, commonly called

*Phthisis Pulmonalis*, or *Consumption*. When the deposit takes place into the lymphatic glands about the neck, it is called *scrofula*; when into the glands of the mesentery, *tabes mesenterica*; when into the meninges or membranes, and surface of the brain, *tubercular meningitis*, or *hydrocephalus internus*, etc. etc.. Indeed, this tubercular deposit may take place in any organ or tissue of the body, producing a variety of symptoms, according to the structure, nature, and functions of the organ or organs in which it is deposited, and the degree of irritation and inflammation which it may produce. Even the bones and ligaments about the joints become diseased in some who are *scrofulous*. This takes place in scrofulous children, and is known by the name of "*white swelling*." That affection of the spine, making it crooked, with crookedness of the long bones, and swelling of their extremities, known by the common name of "*rickets*," usually occurring in weakly children, that are born of scrofulous or rickety parents, and which live in damp or confined situations, without sufficient and proper nourishment and exercise, is another modified form of scrofulous disease. But suffice it to say, the *peculiar abnormal condition of the blood in the tuberculous cachexia*, may give rise to the deposit of tubercular matter in any tissue or organ; or in many parts at the same time, producing corresponding phenomena, if of sufficient amount to cause irritation, inflammation, and suppuration. Like inflammation under certain circumstances, the determination or deposition of the tuberculous matter in one part, seems to act as a revulsive, or to lessen its deposition in other parts; and from failing to recognize this simple law, is probably the reason why many authors have denied the identity of the tuberculous and scrofulous diatheses. In some cases, the tuberculous matter which is in the blood may not be deposited in any part, but

escape through some of the mucous surfaces or kidneys; in this latter case producing *albuminuria*; in which, however, the substance of the kidneys themselves too often suffer from the deposit into them.

Charles Frick, M. D., of Baltimore, has recently examined the blood of eight persons suffering with consumption. I make the following extract:—

*“Pulmonary Tubercles.*—We have examined the blood of eight persons suffering with this disease. In four, the tubercles were as yet crude, while in the others they had softened, and cavities had formed. In No. 5, there was a very large cavity and extensive tuberculization in both lungs; and in No. 7, a man aged 70, there was a cavity in each lung. In comparing these two classes of cases, we have found a marked difference. The average for the fibrin in the first four, in which cases the tubercles were unsoftened, is 2.776, about normal; while in the others it is 4.114. This result is similar to that obtained by Andral. The albumen in every case is above the natural standard, although not so apparently. We have carried out the proportion that it bears to the whole amount of solids in a separate column, and the fact that such is the case will be seen by reference to it. This is also true of each one of Andral's cases, although he seems not to have noticed it; for we find the average in his to be 94.3, while in ours it is only 87.847. The difference between the two stages is also apparent, the average for the first set being 90.83, and for the other 84.35. We make the following suggestions in regard to the increase of this material. Albumen is deposited in all the tissues as a result of secondary assimilation; and we suppose that, in a tubercular diathesis, the vitality is not sufficient to carry it one grade further, and change it into globules, but allows it to remain as albumen, a nucleus for the deposition of tubercular matter, or perhaps to be changed

itself into it. This albumen is deposited alike in every individual, but it is only in a tubercular diathesis, or where the vitality is lowered, that it is converted into tubercle. Andral says, that tubercular matter is never deposited so long as the globules remain at their proper standard, and that when this deposition first takes place, they are always found lowered; and we may add, that the albumen is always found increased. This change is probably not an evidence that they are about to be deposited, as he also thinks; but, that the albumen remains unconverted into globules, accounting for the increase of the one, and the diminution of the other.

“The iron and chlorides follow the laws noticed previously; while a marked difference is perceptible in both the lime and phosphates in the two contrasted stages. In the first set, the lime in every case is above the standard, while the phosphates are below; the average for the first being 0.277, and for the other 0.272; whilst, in the other set, the average is 0.083 for the lime, and 1.265 for the phosphates. This difference in the phosphates cannot be accounted for by the season of the year, for, on making the average from the table previously given, we obtain 0.952 for the first set, and 1.202 for the second; above what is here found in the one case, and below it in the other. It may be, that these salts compensate, in a measure, for one another; or, perhaps the excess of the phosphates, occurring as they do, in the cases which have been some time in the hospital, may arise from the fact, that these persons are constantly taking into their systems ammonia, of which there is always more or less, in every room where patients are collected together.”

| No. of case. | Solids in 1000 grains. | Water in 1000 grains. | Fibrin. | Globules. | Solids of the serum. | Ditto, proportionate to whole solids. | Iron. | Lime. | Chlorides of soda and potash. | Phosphates of soda and potash. | Date of sickness. |
|--------------|------------------------|-----------------------|---------|-----------|----------------------|---------------------------------------|-------|-------|-------------------------------|--------------------------------|-------------------|
| 1            | 212.631                | 789.369               | 3.395   | 125.645   | 86.546               | 87.23                                 | .564  | .272  | 2.530                         | .336                           | August 20.        |
| 2            | 199.666                | 800.334               | 2.688   | 111.453   | 85.525               | 90.30                                 | .487  | .257  | 5.632                         | .197                           | March 22.         |
| 3            | 200.602                | 799.398               | 2.862   | 117.480   | 80.260               | 84.31                                 | .510  | .296  | 4.822                         | .203                           | June 1.           |
| 4            | 207.007                | 802.993               | 2.159   | 104.600   | 100.248              | 101.46                                | .416  | .283  | 2.910                         | .351                           | October 1.        |
| 5            | 169.000                | 831.000               | 5.250   | 94.833    | 68.917               | 85.83                                 | .384  | .082  | 3.992                         | 1.616                          | March 3.          |
| 6            | 198.053                | 801.947               | 4.502   | 117.405   | 76.046               | 80.63                                 | .470  | .182  | 5.500                         | 1.462                          | February 1.       |
| 7            | 155.000                | 845.000               | 2.352   | 91.456    | 61.192               | 82.94                                 | .376  | .027  | 3.560                         | 1.278                          | Nov. 6.           |
| 8            | 167.436                | 832.564               | 4.353   | 93.061    | 70.022               | 88.00                                 | .391  | .640  | 3.924                         | .705                           | Nov. 23.          |
| Average.     |                        |                       | 3.145   | 100.604   | 76.844               | 87.84                                 | .449  | .179  | 3.722                         | .775                           |                   |

CAUSES.—The causes of the tuberculous cachexia may consist (1) of an original conformation, tuberculous constitution, diathesis, or predisposition; or, (2), they may be secondary or accidental.

Of the former, or *hereditary conformation*, Professor Dunglison remarks, that "This is one of the most important of the causes of tuberculosis, and especially of tubercular phthisis. A patient, affected with tuberculous cachexia, entails on his offspring, not tubercles, but a predisposition to them, which may be warded off, by avoiding the exciting causes, but may be developed by causes which would be entirely inoperative in one not so predisposed. It is important, therefore, in the history of any case, to discover whether the parents, or any member of the family, have died of the same disease. It would not appear to be tuberculous cachexia alone, in the parent, which lays the foundation for this fatal malady in the offspring. There are several diseases which have been supposed to produce the result, and the most frequent and important of these are disordered states of the digestive organs, and their consequences; indeed, any state of deteriorated health in the parent, from any cause, may give rise to this cachexia in the progeny." Professor Dunglison further remarks: "It has been stated, that the tuberculous constitution is often communicated

by the parent to the progeny. In the way of hygiene, it is, therefore, important, that precautions should be taken by parents themselves, and every step be avoided that can deteriorate their own general health. If more consideration were bestowed on matrimonial alliances, and a more healthy and natural mode of living were adopted by persons in that station of life which gives them the power of regulating their mode of living according to their own choice, the predisposition which is so often entailed upon their offspring might be checked, and even extinguished, in their family, in the course of a few generations. 'The children of dyspeptic persons,' observes Sir James Clark, 'generally become the subjects of dyspepsia in a greater degree, and at an earlier period, than in their parents; and if they marry into families of a delicate constitution, their offspring become highly tuberculous, and die of phthisis in early youth, and even in childhood.' These remarks are unquestionably just; but how impossible is it to regulate the feelings of individuals, so that any prudential restraints shall be regarded. Every practitioner who has been consulted respecting the propriety of marriage, where one or both of the parties have labored under a disease, or a predisposition unquestionably hereditary in its nature, and who has given advice befitting the occasion, must, at times, have had the mortification to find his advice wholly disregarded, and that he has, at the same time, for ever lost the good opinion of both parties. On the part of the mother, care is, doubtless, demanded, for the plenary health of the offspring, during the period of gestation. But the prevention of hereditary transmission regards rather the condition of both parents at the time of a fecundating union; for the predisposition is as often given by the male as by the female parent. If the tuberculous

diathesis be induced during intra-uterine existence, it belongs to the class of acquired predispositions."

It is a subject of great importance, that those who anticipate a connubial life, should compare their own physical conformation and temperament with that of their anticipated companion, so that a congruous match will be formed physically; as well as mentally, which will tend to confer a vigorous constitution to their offspring. I consider this a duty to which both males and females should pay sufficient heed; not only in justice to themselves, but also to others who may, in any way, be affected or interested thereby; as, for instance, their progeny, relatives, neighbors, and their country. Parents should teach their children the importance of attention to this subject, the nature of their physical conformation and temperament, and point out the form and temperament to which theirs is adapted. This should be done before uncontrollable attachments have been formed. These remarks are applicable, not only to avoid tuberculous affections, but any conformation which has a tendency to develop disease of any kind; as, for instance, the short, thick neck and large chest, which favor the development of apoplexy. These principles are taken advantage of by farmers, in "*crossing*" their stock, in order to improve it.

(2.) Among the *secondary* or *accidental* causes (if we may be allowed to term them as such, though they may be primary), we may mention the *protracted cachectic conditions* which we have heretofore noticed, as the result of *protracted ague and fever*, or as the result of *living in low, damp, malarious, or unhealthy situations, and the deprivation of proper and sufficient nourishment*. Authors mention the deprivation of light as a cause of tuberculosis, as is exemplified in the workers in mines, and those poor families which live in cellars; but without denying

the influence of light, under these circumstances, no doubt much more depends on want of proper ventilation, confinement in close, damp, and confined apartments, where the air is impure, and unwholesome or improper alimentation. The inhalation of small particles of foreign matter by stonemasons, fork grinders, workers in factories, &c., for a long time, may produce tuberculosis. Protracted inflammatory affections of the air-passages, especially if the general health suffers much, tend to the formation of tubercles in the lungs. Some diseases, especially where predisposition exists, also tend to the production of tuberculous disease; as, measles, syphilis, scurvy, &c. &c.

Of late years, some few have entertained an erroneous opinion, that there is an antagonism between marsh fever and consumption; and that malarious districts should, therefore, be favorite residences of the phthisical, or those so predisposed. Up to this time, I have spent nearly all of my life in malarious regions,—and have observed, that not only many die of consumption in these regions—that the more virulent the malarial region, the greater the fatality from consumption, all other things being equal—but that protracted or chronic malarious diseases, producing a cachectic condition, and, perhaps, some concomitant visceral disease, are frequent causes of consumption. To the correctness of this statement, not a few southern and western practitioners can testify. It appears that Professor John P. Harrison, of Cincinnati, does not believe that these two diseases are antagonistic. Professor Dunglison says, “The results obtained statistically in the West Indies, by no means favor an opinion that there is an antagonism between diseases, which are the product of marshy emanations and phthisis; that they prevail together, without seeming to exert any influence upon each other. Dr. Harden, of Georgia, is of opinion

that there is one form of consumption, different from the others, known among writers as *catarrhal phthisis*, or *chronic bronchitis*, which properly belongs to our species of marsh or intermittent fever; and, instead of being antagonistic, is isopathic with the fevers of malarious regions.

I am, however, inclined to the opinion, that *some* malarious districts possess some advantages over certain other portions of the globe, for the consumptive.

**TUBERCLE.**—Professor Dunglison says: “Tubercle, in the simplest and most common form, is a small, yellowish-white body, of a round shape, firm consistence, and sufficiently hard to be crushed in many cases; in others, of the consistence of viscid pus, or cheese. It varies in size from that of a millet-seed, to that of a pea or nut. It is without any trace of organization or texture; is sometimes isolated; at others agglutinated in masses, of greater or less dimension; sometimes infiltrated into the parenchyma of the lungs, and occupying one or more lobules—at others, a lobe, or even the whole lung. Tubercles are very rarely single or solitary, and their number varies greatly. They are commonly situated at the top of the lung, and when they are met with, in the inferior lobes, they are always in a less advanced stage of existence than those of the superior lobes.”

**MICROSCOPIC APPEARANCES OF TUBERCLE.**—According to M. Lebert, tubercle is composed of: 1. “A great quantity of molecular granules, perfectly round, having a diameter varying from  $\frac{1}{1600}$  to  $\frac{1}{800}$  of a line; 2. A hyaline substance, rather consistent, and uniting together the preceding; 3. Globules proper to tubercles. The latter constitute the peculiar characteristics of this morbid product, and are thus described: Their form is rarely alto-

gether round, although it is probable that, on their first deposition, they approach the spherical figure, and that they assume a less regular and often angular contour, as we see in so many other analogous instances, from their juxta-position. They are of a clear yellow color, and contain granules, but no distinct nucleus. These tuberculous globules vary considerably in their size, but without any definite relation to the age of the subject, or to the organs in which they exist. After contrasting the globules in question with those of pus, cancer, and encephaloid, M. Lebert thus expresses himself: 'Tubercle then, contains, in its crude state, an element which is peculiar to it, and which *distinguishes it from all other morbid productions.*'"\* M. Lebert says, these globules "are not affected by water, ether, and the feeble acids; but they are dissolved by the strong acids, as well as by ammonia and caustic potash.

"The opinion of certain pathologists, that tuberculous deposit and its globules are only modifications of purulent matter, is contradicted by the result of microscopic inspection; the differences between them are strong and decided. The corpuscles of the latter are considerably larger, of a regular spherical shape, and contain from one to three nuclei; they are, moreover, usually free and isolated; whereas those of tuberculous matter are, especially in the crude state of tubercles, closely joined together. The globules of cancerous matter are twice, or even four times as large, and they contain a nucleus, in which again from one to three nuclei are often observable.

"In sarcocele, and also in scirrhus and encephaloid tumor of the mamma (*breast*), we not unfrequently find a yellowish, cheesy-looking substance, which much resembles genuine tuberculous matter; but a careful ex-

\* Med. Chir. Rev., Jan. 1846, p. 243. Am. Journ., Oct. 1847, p. 344.

amination with the microscope, clearly shows that it consists entirely of globules of cancer infiltrated with fat.

"When tubercles soften, their interglobular substance liquefies; the globules separate from each other, and may then, by absorbing a certain portion of the fluids, become larger; this change does not constitute an increased growth, but, on the contrary, the commencement of the process of decomposition.

"The pus, which is found blended with the softened tubercles, is supplied by the surrounding tissues, and is by no means the result of any transformation of the matter itself; but the pus, it must be confessed, quickly alters it, and renders its elements much less easily recognizable.

"The globules of softened tubercles become ultimately dissolved in a granular fluid, and thus the ramollissement (*softening*) of their substance passes fairly to the state of diffuence.

"The cretaceous condition of tuberculous matter presents, under the microscope, the appearance of amorphous mineral granules, blended often with crystals of cholesterine, and coloring matter. A part of the tuberculous globules is then removed by absorption, while the other portion remains for a long time in an unchanged condition.

"Occasionally we find, in tuberculous deposit, corpuscles of fat, melanosis, greenish-colored globules, and crystals which have the form of those of the ammoniaco-magnesian phosphate. Besides these admixtures, we may find blended along with them the elements of inflammatory and suppurative action, and various sorts of epithelial exudations; all of which tend to modify the essential microscopic features of the tubercles."\*

\* Amer. Journ. Med. Sci., Oct. 1848, p. 461. Quoted by Dr. Harden, of Ga., in Amer. Journ. Med. Sci., Oct. 1847, pp. 343-4.

COMPOSITION OF TUBERCLE.—From chemical analyses which have been made, it appears that tuberculous matter varies somewhat in its composition, but that by far the largest proportion of it is composed of albuminous matter. M. Thenard found the following:—

|      |                                                               |          |
|------|---------------------------------------------------------------|----------|
| 1st. | Animal matter (albuminous chiefly)                            | 98.15    |
| 2d.  | { Muriate of soda<br>Phosphate of lime<br>Carbonate of lime } | 1.85     |
| 3d.  | Iron                                                          | a trace. |

The following is the mean of two analyses by Dr. Wright:—

|      |                                                               |         |
|------|---------------------------------------------------------------|---------|
| 1st. | Fatty matter with oil globules                                | 11.69   |
| 2d.  | Gelatine                                                      | 9.1     |
| 3d.  | { Phosphates<br>Sulphates } Lime<br>{ Muriates       } Soda } | 6.85    |
| 4th. | Carbonate of lime                                             | a trace |
| 5th. | Oxide of iron                                                 | a trace |
| 6th. | Albuminous matter with fibrin                                 | 70.6    |

“The chief organic constituents of tubercle, according to the analyses of M. Hasse, are: 1st, fibrin; 2d, casein; 3d, fat; with 4th, a small proportion of albumen. The inorganic compounds are: chloride of sodium, phosphate of soda, phosphate and carbonate of lime, oxide of iron, &c.”\*

After reviewing the analyses, Dr. Bennet comes to the following conclusions:—

“1. That tubercle consists of an animal matter mixed with certain earthy salts.

“2. That the relative proportion of these varies in different specimens of tubercle. That animal matter is

\* Quoted by John M. B. Harden, M. D., of Liberty county, Georgia. For a more detailed notice of this subject, I would refer the reader to an interesting paper, with numerous quotations, by Dr. Harden, on *Isopathia, or the parallelism of diseases*. See Amer. Journ. Med. Sci., Oct. 1847.

most abundant in recent, and earthy salts in chronic tubercle.

“3. That the animal matter certainly contains a large amount of albumen. Some chemists have detected casein, the existence of which is probable; others gelatin, the presence of which is more doubtful;” and “that very little difference in ultimate composition has yet been detected between recent tubercles, and other so-called compounds of protein.”

Dr. Carswell believes the chemical composition of tubercle to vary at different periods in different animals, and probably in different organs. In man, being composed chiefly of albumen with various proportions of gelatin and fibrin.

SCROFULOUS MATTER.—J. M. B. Harden, M. D., says: “According to the analyses of scrofulous matter by Prout, Gendrin, and Bredon, as given us by Mr. Phillips, in his late work on *Scrofula*, it is made up, for the most part, of albumen, like tubercle. Dr. Prout regarded scrofulous matter as albumen imperfectly developed; Gendrin as a mass of albumen with excess of salts; Bredon considers it to be an albuminate of potash and soda.”

When tubercles are small (*miliary tubercles*), if the peculiar condition of the system which gave rise to their deposition be changed to a healthy one, their further development may be arrested, and the individual's life may be very little, if at all, shortened thereby: but if his or her health should become seriously affected, for some time, late in life, there is a great liability to the renewed development of tubercles, especially in the lungs, and if great care is not taken in time, and the proper course pursued, death will be very likely to ensue. These remarks apply, but generally with less force, to earlier periods of life.

When tubercles have been deposited or formed in sufficient amount to produce *irritation* and *inflammation*, succeeded by *ulceration*, which they do in a longer or shorter period, the pus bathes the tuberculous matter and softens it, and an abscess is formed which makes its way outwardly; if in the lungs, making its way into the bronchia, and the *matter* is thrown up by coughing, by expectoration. A *cavity* is thus formed in the lungs, which, under favorable circumstances, may cicatrize; but usually there are other tubercles forming in the neighborhood of it, which are apt to be more copious the greater the surrounding inflammation, and which usually, sooner or later, become sufficiently developed to take a similar course to the previous ones, and which may communicate with, and enlarge the former cavity by the addition of the new one; or a new cavity or cavities may be formed, successively or contemporaneously, till a considerable portion of one or both lungs may be destroyed. A cavity may cicatrize, and, under proper treatment and favorable circumstances, the further deposition of tubercles may be arrested, and the patient's health restored; but not unfrequently a truce, of some months or years, inspires the individual with the feeling of immunity; when, especially under favorable circumstances for their development, a renewed deposition of tubercles takes place, which pursue a similar course to the other crop or crops, till the lung or lungs become so much destroyed, hæmatisis is imperfect, the general health becomes more impaired, wasting away of the body takes place as nutrition becomes more and more impaired, till death is triumphant over vitality, and the body is subject to the ordinary laws of decomposition. Sometimes the abscess may destroy a blood-vessel sufficiently large to produce *hæmoptysis*, and if the hemorrhage is copious, death might ensue therefrom or thereby, though this is

rarely the case. In some cases, the abscess or cavity has extended, or made its way, into the cavity of the chest, producing *pneumothorax* and pleurisy; or the pleura pulmonalis and pleura costalis may adhere and grow together by means of adhesive inflammation, and the abscess may make its way out through the walls of the chest. This, however, is rarely the case.

*Hoarseness* is usually an early symptom of consumption, and when there is much *ulceration* in the *larynx*, the hoarseness is much more manifest, the *voice* often becoming very feeble, or even entirely extinct. A large amount of the *expectorated matter* comes from the *larynx*, *trachea*, and *bronchia*; the *softened tubercles* and *pulmonary excavations* not being the only source of it.

Generally, tuberculous matter is simultaneously deposited in other parts of the system, especially along the alimentary canal, in the latter stages of consumption; at which time there is, most commonly, inflammation, which passes to ulceration of the mucous membrane of the bowels, producing diarrhoea. When the tubercles become sufficiently developed to produce inflammation in that portion of the lung surrounding them, the pain and stricture in the chest are usually increased. The adhesive inflammation which causes the pleura pulmonalis and pleura costalis to unite, causes pain in the corresponding portion of the chest. Pains of a neuralgic character also not unfrequently attend, and are felt, not only in the thorax, but in the sides, shoulders, back, and other parts of the system. The hectic fever, sometimes preceded by a chill, which usually comes on in the afternoon; the profuse perspirations, cough, difficult breathing, emaciation, swelling of the feet and ankles, wan features, sunken eyes, &c. &c., need scarcely be mentioned here, as they are usually well known and observed by most persons.

**PHYSICAL SIGNS.**—A full consideration of the *physical signs* in consumption, would occupy too much room in this volume. The attention we have given to *phthisis* in general, is, indeed, a digression, in part, from the main subject of the work; but desirous to give condensed information on the subject of *tuberculosis*—and consumption, one of its frequent forms—I hope this information will not only be acceptable to the reader, but of incalculable interest and profit. Those who wish to study the *physical signs* more fully, I would refer to works which treat of it more at length.

*Definition.*—“By the *physical signs* of the healthy or diseased condition of the contents of the thorax, we mean the evidences that are afforded to the senses, uninfluenced by the vital properties of those contents; in contradistinction to *symptoms*, which are the evidences afforded by the living contents in action.” (*Dunghlison.*)

These are principally appreciated by means of *auscultation* and *percussion*. **AUSCULTATION** is the means by which we ascertain the healthy or diseased condition of the organs within the thorax, &c., by listening; either with the ear, applied directly to the outer walls of the chest (*immediate auscultation*), or by the intervention of the *stethoscope* (*mediate auscultation*). **PERCUSSION**, strictly speaking, is a sort of auscultation, a means of *eliciting sounds* which indicate a healthy or diseased condition, by striking the chest; either with the fingers, the tips being placed on a level, or by some instrument which answers the same purpose. *Percussion* may be *immediate*, that is, by striking the chest directly; or it may be *mediate*, that is, by placing a finger of the left hand transversely and flat on the chest, with the palmar surface next to it, or by the intervention of a flat piece of ivory or metal, laid and held flat on the chest; and striking it, either with the tips of the fingers of the right hand,

or an instrument made for the purpose. The instrument which is placed on the chest is called a *pleximeter*, and the one used for striking, a *plexor*.

Though we are told that some of the abnormal sounds in some pulmonary affections did not even escape the attention of Hippocrates, yet the diseases of the organs contained within the thorax were not well understood till of recent date. For this improvement the world is indebted to the distinguished Frenchman, M. Laennec.

Of course, in order to properly appreciate the sounds indicative of disease, we should be acquainted with the normal or healthy sounds, the *respiratory* or *vésicular murmur*; discovered by auscultating a part of the chest corresponding with any portion of the lungs—being more intense and prolonged in inspiration, and much more audible in children than in adults; hence called *puerile*—and the clear hollow sound elicited by percussion. A knowledge of diseases of the heart is also obtained by auscultation and percussion. In pregnancy, after the fifth month, auscultation discovers the pulsations of the foetal heart—affording indubitable evidence of this condition; at the same time assuring us that the foetus is alive.

The *physical signs* of *phthisis pulmonalis* may be considered under two divisions: 1st, while the *tubercles* are still in their *crude state*, or before softening has taken place; and 2dly, the *period of excavation*, after softening of the tubercular matter has taken place, and one or more *cavities* are formed in the lung or lungs.

1st. Tubercles are commonly deposited in the apex or upper portion of one or both lungs; usually to a greater extent in one lung than the other—and over these regions, as between the clavicle or collar bone and the nipple, when the tubercular deposition is sufficient, *percussion* elicits a *dull sound*; clearness of sound diminishing

as the tubercular deposition increases, till the dull sound is completely manifest. On *auscultation*, the respiratory murmur will be found to be weak, suppressed, less full and free—while in the sound portions of the lung it will be *puerile*, increased, more distinct; expiration more audible; or, as Professor L. M. Lawson expresses it, expiration “prolonged and intense; slight, dry, crackling sound; occasionally mucous rhonchi; more or less bronchial respiration and cough, and bronchophony; vibration of the voice increased.”

2d. After softening of the tuberculous matter has taken place, and one or more cavities formed, percussion still elicits a sound more or less dull; being clearer, accordingly as they are larger, nearer the surface, and the less the tubercular deposit in the adjacent, surrounding, or intervening parts. When the cavity is large and near the surface, the sound will be clear. Auscultation informs us that in certain portions of the lung there is no vesicular respiration, whilst in the larger bronchia the respiration may be considerably louder than natural. The mucous, crepitant, and cavernous rhonchi may be heard. Cavernous respiration, which occurs when air enters a cavity that is partially or entirely empty, may also be heard, being more manifest the larger the cavity and the nearer it is to the surface; the hollow or cavernous cough is manifest; and pectoriloquy may be heard, being more distinct when the cavity is large and near the surface, and the less pus or matter it contains. When a cavity is very large, and sound is made on respiration analogous to that produced by blowing into a flask or bottle, it is said to be *amphoric*; when the cavern or abscess extends so as to communicate with the cavity of the thorax, forming a communication between the bronchia and cavity of the chest, producing *pneumothorax*—a sound, according to Laennec, like that induced by

striking metal, glass, or porcelain, with a pin, or, according to Professor Dunglison, "more like the sound of the keys of a "musical snuff box," is produced—called "*metallic tinkling*." Dunglison says, it "is heard on causing the patient to speak or breathe, but is more distinct when he coughs. When the phenomenon is not so strongly marked, it produces only the *metallic resonance*."

As to the cause of these different sounds, Professor L. M. Lawson briefly remarks, that "the dull sound, and the weak respiratory murmur, are produced by the tubercular deposit displacing air; mucous rhonchi depend on the presence of bronchitis; the crepitating rhonchi on inflammation; cavernous rhonchi are produced by air entering a cavity containing fluid; cavernous respiration occurs when air enters a cavity partially or entirely empty. Bronchophony, bronchial cough and respiration, depend on consolidated lung."

THORACIC VIBRATION, very recently, by M. Monneret, appears to be made more available and of more extensive application, as a means of diagnosis, than any notice I have heretofore seen; and though the following extract is not alone applicable to consumption, it may be of interest to the reader, as applicable to this and other thoracic diseases.

"By the term '*thoracic vibration*,' M. Monneret designates the oscillation of the parietes of the chest, perceptible by the application of the hand upon the thorax of a person who sings or speaks aloud. The vibrations are more distinct in the right side than in the left,—and in the anterior than in the posterior regions. The vibration is propagated from the larynx, by the walls of the air tubes, by the solid elements of the thoracic parietes, and by the air contained in the lungs. The larynx is

the sonorous instrument, and the phenomena perceptible by the application of the hand, are caused by the propagation of the undulations of sound, through the agency of good conductors. By disease of the chest, the physical conditions of these conductors being modified, the pectoral vibrations undergo changes, which Dr. Monneret has studied for the purpose of discriminating from each other the various alterations of the respiratory organs.

“The vibration is increased in pneumonia, and first stage of consumption; it is diminished in pleurisy, emphysema, and pulmonary excavations.

“In pneumonia, thoracic vibration is invariably increased, and to that degree, that even when the signs furnished by auscultation and percussion are still of a doubtful nature, a positive diagnosis may be obtained—a circumstance peculiarly advantageous in the diseases of infancy, when auscultation is difficult, and its results questionable. The phenomena of vibration are also increased in pulmonary œdema—a fact testified in the last stages of disorders of the heart. In the first period of consumption, when the lung is condensed by the presence of crude tubercular masses, it often happens, that auscultation furnishes only negative signs, or increased roughness of the respiratory murmur, so slight as to leave some hesitation in the mind of the observer. ‘In such cases,’ says Dr. Monneret, ‘the diagnosis is powerfully assisted by the application of the hand, whilst the patient speaks aloud—the vibration being invariably increased in the diseased regions. Again, in pleurisy, attended with the formation of plastic adhesions and false membranes, no fluid being exuded between the lung and the thoracic walls, the vibration caused by the voice is considerably augmented.’

“It is, on the contrary, diminished or abolished in

pleurisy, when liquid effusion has taken place. The increase or diminution of the morbid secretions are also marked by corresponding modifications in the transmission of sound to the hand. In pulmonary excavations of some extent, the vibration of voice is increased or altogether abolished; but, on the margin of the cavities, it is, on the contrary, increased by the condensation of the lung around the ulceration. In pneumothorax, Dr. Monneret had four times occasion to study the vibrations of the walls of the chest, and in all the cases he found them abolished in the regions corresponding to those occupied by the effusion of air. In pulmonary emphysema, also, the undulations of sound, perceptible to the hand, are diminished—a fact easily accounted for by the rarefaction of the tissue of the lungs.

“Thus, the study of the vibration of the thoracic walls can be made available in the diagnosis of doubtful cases, and forms a valuable addition to the other physical signs of thoracic disease. *Med. Times*, from *Revue Med.-Chirurgicale*, Sept. and Oct. 1848.” See *Amer. Journ. Med. Sci.*, Jan. 1849.

**PATHOLOGY OF TUBERCULOSIS AND CONSUMPTION**, the latter, as before remarked, being one form or modification of the former. The erroneous opinions that have heretofore prevailed,\* on account of a want of knowledge of the correct pathology of tuberculosis, and especially that form called phthisis pulmonalis, or consumption, may, in a great measure, explain the reason why, or be offered as an apology for, the want of success, heretofore,

\* And, I may add, even yet. And may we not expect that improvement in this department will still be tardy, and rendered more so, so long as such prominent and influential teachers (who stand deservedly high as surgeons) as Professors B. W. Dudley, Gross, and others, inculcate and disseminate erroneous doctrines on this subject?

in the treatment of the different modifications of this form of disease. When tubercular matter is deposited in sufficient amount, in any part of the living tissues, it acts as a foreign substance, producing irritation and inflammation, which latter increases the deposition of the tuberculous matter—hence, it has heretofore been a common error with many, and is with some yet (the early deposit of tubercular matter being latent), to regard the tuberculous deposit as the result of inflammation, leading to the adoption of improper treatment, and, of course, a consequent want of success. Of late years, microscopic examinations, and the investigations in animal or organic chemistry, have thrown more light on the nature of this form of disease; and we may still expect our knowledge increased from facts derived from these sources, not only in relation to tubercular diseases, but others. As our knowledge of morbid processes improves, as the microscope and organic chemistry open up to us the primary alterations producing lesions of the body, when pathology is made the companion of physiology, and both constitute the foundation for a rational system of therapeutics,\* then may we hope to see the success of practice corroborating the correctness of theory, more fully displayed, and medicine relieved, at least to a great extent, of empiricism.

In the *tuberculous cachexia*, the general health is more or less impaired, the tone and energies of the vital forces are diminished, the actions of the organs of nutrition and assimilation are defective, the blood is in an abnormal condition, more or less analogous to what it is in the *cachectic* conditions we have already noticed. The pathological condition of the blood has been too much neglected by pathologists in this form of disease. Recently, the

\* Bennet.

researches of M. Andral have given us some information on the condition of the blood in this and other diseases. Professor Dunglison says, in alluding to M. Andral's researches, that "In all the cases of incipient tuberculosis, the individual was, to a certain degree, anæmic, or the blood possessed a modification of composition, like that which belongs to feeble constitutions, or those in which, owing to some cause, the vital forces have lost their energy. The quantity of globules was diminished. In proportion, too, as the tubercles progressed, the diminution of the globules became greater and greater, and when the lungs were filled with caverns, it attained its minimum; yet this diminution was never as great as in chlorosis. M. Andral has only seen a single case in which the proportion of globules was below 80 in 1000. In every other case it oscillated between 80 and 100." The amount or proportion of fibrin is said to be normal, or even increased, when inflammation and fever occurs; though probably it is abnormal in other respects.

We have already noticed the nature of tuberculous matter. In whatever part of the body it is deposited, it would seem quite clear that the blood must furnish the elements of it. Dr. Wright says: "Tubercular matter may be found either in the blood-vessels, or externally to them. But, wherever tubercle is found, the blood itself is essentially the source of it. In those cases, numerous enough, in which tubercle is discharged abundantly, and in a state of complete maturation from the mucous membrane of the trachea, or bronchi, or bowels, without any lesion of these parts, such matter must have been formed and matured in the circulating system, whence it was eliminated as a foreign body by the most eligible outlet." I believe the most prevalent opinion of the present day, and the modern phraseology are, that in the tuberculous or scrofulous diathesis, by a *perversion* of the ordinary

process of nutrition, by *perverted action*, not inflammation, inorganizable matter (which, we have seen, is mostly composed of albumen, with some earthy salts, the elements of which, or the matter itself, being already formed in the blood) is deposited, which, in a healthy condition, would have taken the form of organized fibrin. To Dr. Hughes Bennet, it seems certain, that in tubercular diseases and chronic rheumatism, the albuminous compounds are in excess, and the oily compounds diminished, in the economy.

Dr. Carpenter says : " In persons of that peculiar constitution which is termed scrofulous, or strumous, we find an imperfectly organizable or cacoplastic deposit, or even an altogether aplastic product, known by the designation of tubercular matter, frequently taking the place of the normal elements of tissue, both in the ordinary process of nutrition,\* and still more when inflammation is set up. From an examination of the blood of tuberculous subjects, it appears that the fibrinous element is not deficient in amount, but that it is not duly elaborated ; so that the coagulum is loose, and the red corpuscles are found to bear an abnormally low proportion to it. We can understand, therefore, that such a constant deficiency in the plasticity, must affect the ordinary nutritive process, and there will be a liability to the deposit of cacoplastic products without inflammation, instead of the normal elements of tissue. Such appears to be the history of the formation of tubercles in the lungs, and other organs, when it occurs as a kind of metamorphosis of the ordi-

\* Dr. Carpenter is certainly in error, in saying that tubercular matter may be deposited " in the ordinary process of nutrition," for the process must certainly be a *morbid one* ; and Dr. C. shortly after contradicts himself. He may, however, here mean, that the *process* is not recognized by us, that it is latent, and the tubercular matter deposited before we are aware of it.

nary nutritive process; and in this manner it may proceed insidiously for a long period, so that a large part of the tissue of the lungs shall be replaced by an amorphous deposit, without any other ostensible sign than an increasing difficulty in respiration. It is in the different forms of tubercular deposit, that we see the gradation most strikingly displayed between the plastic and aplastic formations. In the semi-transparent, miliary, gray, and tough yellow forms of tubercle, we find traces of organization in the form of cells and fibres more or less obvious; these being sometimes almost as perfectly formed as those of plastic lymph, at least on the superficial part of the deposit, which is in immediate relation with the living structures around, and sometimes so degenerated as scarcely to be distinguishable. In no instances do such deposits ever undergo further organization, and, therefore, they must be regarded as cacoplastic. But in the opaque, crude, and yellow tubercle, we do not find even these traces of definite structure, for the matter of which it consists is altogether granular, more resembling that which we find in an albuminous coagulum. The larger the proportion of this kind of matter in a tuberculous deposit, the more it is prone to soften, whilst the semi-organized tubercle has more tendency to contraction. This is entirely aplastic. Now, although tubercular matter may be slowly and insidiously deposited by a kind of degradation of the ordinary nutritive process, yet it cannot be doubted that inflammation has a great tendency to favor it, so that a larger quantity may be produced in the lungs after a pneumonia has existed for a day or two, than it would have required years to generate in the previous mode. But the character of the deposit still remains the same, and its relations to the plastic elements of the blood are shown by the interesting fact, of no unfrequent occurrence, that in a pneumonia

affecting a tuberculous subject, plastic lymph is thrown out in one part, whilst tuberculous matter is deposited in another. Now inflammation, producing a rapid deposition of tubercular matter, is peculiarly liable to arise in organs which have been previously affected with chronic tubercular deposits; which, acting like foreign bodies, may of themselves become sources of irritation; and the perversion of the structure and functions of the part renders it peculiarly susceptible of the influence of external morbid causes. These views, at which several recent physiologists and pathologists have arrived on independent grounds, seem to reconcile or supersede all the discordant opinions which have been upheld at different times, regarding the nature of tubercle; and lead to the soundest views with respect to the treatment of the diathesis."

Dr. Harden, after investigating the subject, and making the above long quotation, remarks: "Having now explained, as far as we are able, the nature and origin of tubercle, or strumous matter; which we believe identical, we lay down the following proposition: that, namely, in whatever part of the system this matter may be found deposited, however variant may be the symptoms produced from the functions disturbed, the diseases by which this deposit was effected, are invariably the same, or, in other words, are isopathic in their nature. This proposition is fully established if the law, which we have already laid down, be admitted to be true, namely, that 'diseases which result in products, or deposits, which are both isomorphic and isomeric, must be considered as isopathic, no matter how they may differ in their seats and symptoms.'"

Does it not seem rather remarkable, that some are so illogical as to consider the different modifications of tubercular disease as so many distinct diseases, because the tuberculous matter happens to be deposited in some

cases in one part of the body, and in others in other parts? In syphilis, if in one case an ulcer should appear in the groin, or a node on the shin bone, and in another case an ulcer should form in the throat, or the superior maxillary be affected, or spots on the skin, would they be regarded as different diseases? Or in rheumatism, because in one case the knee should suffer, and in another the elbow or heart? Or, indeed, any other constitutional disease, which may at one time exhibit certain local phenomena in one place and then again in another? We have already referred to some authors who tell us the chief ingredient in tubercle is albumen, and that the chief ingredient of scrofulous matter is albumen too. M. Laennec says: "Tubercles in the lungs differ *in no respect* from those situated in the glands, and which, under the name of scrofula, after being softened and evacuated, are followed by a perfect cure." Mr. Gulliver says, that "crude tubercular matter, from *whatever organ obtained*, differs as little in its microscopical as in its general and chemical characters. The drawing shows how nearly the microscopical elements composing crude tubercles of the *lungs* and of the *lymphatic glands agree*." Lugol says: "The identity of scrofula and pulmonary tubercles is, in our opinion, *most manifest*;" and further remarks, that "*the natural death of the scrofulous, is by consumption*;" we might say, indeed, that they seldom die in any other way, for in all forms of scrofula, death rarely takes place until after the invasion of the lungs by tubercular deposit." It appears that Dr. Glover is a believer in the identity of scrofula and tubercle. I might quote other authors on this subject, but will close this part of it by the following quotation from the reviewer of Dr. Gibert's work on pulmonary consumption. "These seeds (that is, of unorganizable matter) are generally known by the name of tubercular matter, and when deposited in the lungs in separate

masses, they are termed tubercles, and the resulting disease is denominated consumption of the lungs. It may, however, be here observed, that where tubercular or unorganizable matter becomes deposited in any of the lymphatic glands or in the joints, the disease is termed scrofula. If, on the other hand, it is arrested in its passage through the mesenteric glands, then the name of *tabes mesenterica* is employed to distinguish it. It must, therefore, appear obvious that these three diseases *are all radically one and the same*, depending entirely on the presence of unorganizable matter, and *differing only in locality.*"

TREATMENT.—We come now to speak of the treatment of the different modifications of *cachexia* which we have noticed, and which require the same general principles of treatment, with some modifications adapted to each form. We may observe with regret, that though authors have mentioned, in general terms, the principles which should be our guide in the treatment of this family of diseases, yet in the detail they have departed widely from them, especially with regard to consumption. We have paid some attention to the pathology of these affections, and should resort to the means best calculated to remedy these morbid conditions; to improve the condition of the blood, to increase and improve the blood-globules, etc.; to impart energy to the vital forces, to the functions of assimilation and nutrition, to increase the tone and vigor of the system, to change the diathesis, or morbid condition, and bring it to a healthy one, as well as to remedy, if possible, the organic or local morbid conditions which are produced by the different forms of *cachexia*, and which are emphatically constitutional. In order that these indications may be fulfilled, it is important that every rational mind interested should be

impressed with the importance of time and perseverance—and it would be well for physicians to explain these things, as well as they can, to those who seek their professional advice, in order that they may be induced to continue the treatment which is the only earthly haven of safety to them—and also that they may not lose confidence in the capability of their medical adviser, and fly from one to another, and to every remedy that is recommended by friends, to patent nostrums, which, on account of the opiates they contain, may induce the patient for a short time to believe he is better; but which confidence is illusive, and only calculated to add to the morbid condition. Important time is thus also lost, and the disease is rendered more fatal.

To carry out and fulfil the above indications, the ferruginous preparations, the cod-liver oil, and proper adjuvantia, with a variety of generous and nourishing diet, and other hygienic means calculated to improve the tone and vigor of the system, are decidedly and unquestionably superior to all other means yet known. Is it not remarkable that European and our own hyperborean authors, having witnessed the successful influence of different preparations of *iron in chlorosis* (*green sickness*), should not have been led to its more general exhibition in the kindred cachexia? Though I have mentioned cod-liver oil in connection with iron, it is proper to remark that its therapeutic value is not yet so well ascertained. Recently, it appears to be attracting more attention than formerly. We will notice it more particularly after a while. In the different cachectic conditions, the preparations of iron act as powerful tonics, improve the blood, increase the blood-globules, change the features from a pale, sickly aspect, causing them to present the florid appearance of health. In order to be more certain in securing these effects, or to

contribute to the favorable influence of the preparations of this metal, it is of importance to combine corrigents, or stimulants, or stimulant tonics, with them. It may be well to use one preparation for a few weeks, and then alternate with another, using the latter about the same length of time as the former, then resuming the former again, or using some other preparation of this metal. The subcarbonate of iron may be mixed with pulverized capsicum (Cayenne pepper), myrrh, or seneca snake-root, etc. etc., with the addition, if necessary, of a small portion of pulverized rhubarb, to avoid costiveness. The following formula may answer this purpose :—

|                    |                        |
|--------------------|------------------------|
| R. Sub. carb. iron | six to ten drachms ;   |
| Capsicum, pulv.    | two to three drachms ; |
| Rhubarb, pulv.     | two to four drachms.   |

Mix well, by rubbing together in a mortar. Dose, from fifteen to twenty grains, which may be gradually increased, if necessary, three times a day ; and may be conveniently taken in syrup of any kind, molasses, or moistened with a little brandy, wine, or whisky. Or, the above powders may be made into pills with some tonic vegetable extract ; as the extract of gentian, or Peruvian bark. If the pulverized bark of the root of the seneca (*Polygala senega*) be used in the above formula instead of the pepper, five drachms or more may be added. If there is no costiveness, the rhubarb should be left out, or used in smaller quantity. Pills made of the sulphate of iron (copperas), pulverized capsicum or seneca, and extract of gentian or barks, may be alternated with the above, every week or two. They may be made as follows :—

|                       |                         |
|-----------------------|-------------------------|
| R. Sulphate of iron   | two drachms ;           |
| Cayenne pepper, pulv. | two drachms, or,        |
| Seneca                | one and a-half ounces ; |
| Extract gentian       | four drachms.           |

Make into one hundred and twenty pills; dose, three of them, thrice daily.

Pills of carbonate of iron, sometimes called Vallet's ferruginous pills, are considered, by some authors, as being superior to all other preparations of this metal;—from three to five grains of the ferruginous mass being a dose, which may be taken three times a day; the dose may be increased, so that twenty-five or thirty grains may be taken in the course of the day. The influence of this preparation would, no doubt, be much improved by the addition of some stomachic, corrigent, or stimulant; as capsicum, seneka, myrrh, &c. &c. This preparation, or Vallet's ferruginous pills, have been very highly spoken of as being successful in the treatment of *chlorosis*. Dr. Bache says, "It is considered particularly useful in chlorosis, amenorrhœa, and other female complaints, and appears to act favorably by increasing the coloring matter of the blood, causing the capillary system to become more fully injected, and the lips to assume a redder color." Bland's pills are also favorably spoken of in similar conditions of the system, especially chlorosis.

In that modification of these cachexæ called *scrofula*, the *syrup of iodide of iron* may, occasionally, be alternated with the other preparations of iron, in doses of from fifteen to thirty or forty drops, taken three times a day, in half a glass of sweetened water. If it should unpleasantly affect the stomach, a piece of starch, biscuit, or bread, may be eaten immediately after taking it; or it should be discontinued. According to the writer's experience and observation, the preparations of iodine, so far as he has used them, or seen them used, solely relied on as therapeutic agents, are not only ineffectual in the different forms of cachexia, but are not unfrequently absolutely detrimental. Iodine seems better adapted to the scrofulous form than any other,—and the iodide of iron

I believe is the best form in which to exhibit it, as above directed. M. Negrier speaks highly of different preparations of the leaves of the walnut tree (*Juglans regia*); and especially of the extract, in scrophulosis.

If iodine is given in *anæmia*, I believe its usual effect is to increase this condition, at least in many cases. To a lady that was moderately *anæmic*, and affected with *hepatalgia*, I once gave iron for a time; she improved under its use; but before the cure was entirely complete, I suspended the use of iron, and gave iodine for a time, which had the effect of increasing the anæmic condition; or, at any rate, the anæmia and hepatalgia increased during its use. I again gave subcarbonate of iron, and the improvement was soon manifest. In *splenic cachexia*, and for the concomitant enlargement of the spleen, iodine is, I believe, unfortunately too much given. From experience and observation, I feel confident that it seldom exercises a favorable influence either on the spleen or the cachectic condition; and that it is often detrimental—to say nothing of the neglect of more appropriate remedies, and the loss of important time.

If, during the treatment of any of the forms of cachexia, aperients should be needed to gently open the bowels, the extract of white walnut (*Juglans cinerea*), or the extract of dandelion and rhubarb, answers this purpose very well. I may here mention, that the use of the preparations of iron gives to the stools a dark or black color.

PHTHISIS PULMONALIS, OR CONSUMPTION—TREATMENT OF.—In the treatment of this form of cachexia, the preparations of iron should be given as recommended above; and it is important in this, as well as in the other forms, that attention should be paid to it sufficiently early, so that this diathesis of the system may be changed to a

healthy condition before the disease has progressed too far in its onward course. When tubercles have formed in the lungs, it is thought they cannot be removed by medicine by absorption; but if they are as yet too small to produce irritation and inflammation, then further deposition and development may be arrested, the individual's health may be restored, and, under favorable circumstances, his or her life may be very little, or not at all shortened thereby, or in consequence thereof. But if the tubercular deposit has accumulated to such an extent as to produce inflammation and suppuration, or abscess, the tubercles become softened and may escape, as is usually the case, through the bronchia and trachea, and be thrown off by expectoration. Under favorable circumstances and proper treatment, the abscess in the lungs may be made to heal; and the health of the individual may again be established. But when large amounts of tuberculous matter are deposited in different parts of the lungs, and they are greatly injured by cavities, here and there, a favorable issue or termination need not be expected under any circumstances, or mode of treatment.

It would be well for those who are cachectic, or predisposed to consumption, if they could be made to understand the importance of early attention to this condition, and be induced to resort to, and persevere in the use of ferruginous preparations, as, indeed, a part of their diet, till this diathesis is removed; after which, they may gradually be dispensed with; paying particular attention, in the mean time, to other measures calculated to invigorate the system; and the avoidance of those which are calculated to have the contrary effect. "Some experiments on the influence of different agents, in preventing the development of tubercles, have been recently made, by M. Coster, and the details thereof laid

before the Académie Royale de Médecine of Paris. He experimented upon dogs, rabbits, Guinea pigs, and fowls, which he subjected to the most injurious hygienic influences; and to combat these, administered iron, baryta, iodine, bromine, mercury, and tannin. The agent which always succeeded with him, in the prevention of tubercles, was a ferruginous bread, composed of half a drachm of the subcarbonate of iron to a pound of bread. A quarter of a pound of the bread was taken in the day.”\* Would it not be well for those who are predisposed to tuberculosis, or consumption, to profit by these experiments? In the treatment of consumption, perhaps it would be well to give some of the preparations of iron, as in the formulas heretofore given, in *cod-liver oil* (*oleum jecoris aselli*). Indeed, since the publication of Dr. Hughes Bennett’s work in 1841, on the use of cod-liver oil in consumption, it appears to be gaining some reputation for the treatment of this disease. Dr. Bennett was induced to give cod-liver oil in tubercular diseases, and chronic rheumatism, because he felt certain that in these diseases, the albuminous compounds were in excess, while the oily compounds were diminished in the economy; and that the direct addition of the latter, is the rational method of supplying the wants of the system. A reviewer of Dr. Bennett’s work says: “It operates by imparting to the system one of the great elements necessary for the nutrition of the animal economy, in cases where that element is essentially defective. In the hands of the rational practitioner, it is destined to be an important means of curing a class of diseases, hitherto considered of the most dangerous and fatal nature.” Dr. Bennett says: “The effect of the oil, in many cases of phthisis, is very striking, and is well seen in hospital

\* See Dunglison’s Practice, Vol. I. pp. 369, 370.

and dispensary practice. Individuals, presenting emaciation, profuse sweats, constant cough and expectoration, as most prominent symptoms, with a degree of weakness that prevents their standing alone, after a few weeks use of it are enabled to get up with ease and walk about, with visible improvement in their general health, and an increased amount of flesh. The physical signs of the disease may continue unaffected for some time; but if the treatment be continued, the moist, gurgling rales are exchanged for dry, blowing sounds, which become more and more persistent, pectoriloquy is merged into bronchophony, the respiration is easier, and a check is evidently given to the ulcerative process, and the formation of purulent matter in the air passages. In this state, patients often feel themselves so well that they insist on leaving the hospital, or give up their attendance on the dispensary. Dr. Bennett has frequently found it impossible to prevail on such persons to continue the treatment, and the consequence is, that, again returning to their often unhealthy employment and bad diet, and exposed to the other causes favorable to the production of the disease, the distressing symptoms again recur. Several cases, with one or more caverns in the lungs, have in this manner returned to the infirmary from four to seven or eight times, during the last six years, and on each occasion have gone out in their own opinion perfectly cured."\*

As, in most cases of consumption, there is more or less dyspepsia, especially in the latter stages, which renders the stomach irritable, impairs the appetite, often prevents sufficient nourishment being taken, and in some of these cases the cod-liver oil cannot be retained on the stomach,

\* Monthly Journal and Retrospect, May 1848, from *Bennett, on Cod-liver Oil*. Edinburgh, 1848. Am. Journ. Med. Sci., July 1848.

Dr. Bennett says it will then be necessary to calm the irritability of the stomach, and the best remedy for this purpose, according to his experience, is naphtha.

The following communication to the editor of the *American Journal of the Medical Sciences*, Dr. Isaac Hays, and which is published in the January No. of that Journal, 1849, may add further encouragement in the use of the cod-liver oil. The communication is from J. Young, M. D., of Chester.

“The following case is thought not to be void of interest. It shows that, in the article used, we have an addition to our resources in the treatment of consumption, which promises more success than any, or all others, in some cases. Certain it is, that the case about to be detailed was an unpromising one, and the oleum jecoris aselli was the only, or the first article, that produced the least check to the onward progress of the dire invader.

“Mrs. K., of your city, a widow lady, of a consumptive family, aged forty-four years, visited me, last May, for advice. She had had a cough for fifteen, or more, months, gradually increasing in violence, for which she had tried a great variety of remedies, with but little or no benefit. She had had various medical prescriptions, and had been prevailed on to try homœopathy. She had tried many of the quack remedies, such as syrup of wild cherry, Jayne’s expectorant, the syrup of tar and naphtha, &c., but none of them had been of any service. Her appearance was pale and haggard; her walk exceedingly slow, and bowed forward. She had profuse expectoration; exhausting night sweats; was very ‘short breathed,’ and coughed, on using a little exercise, almost incessantly, with occasional hard ‘spells’ that almost exhausted her; her appetite was variable, and her stomach dyspeptic; her pulse was 110; tongue covered with a white fur; respiration from thirty-five to forty in a

minute. Auscultation revealed, under the scapular end of the left clavicle (collar bone), strongly marked bronchophony, and also in the interscapular space the same, though less strongly; in the axilla, pectoriloquy, with a strong, gurgling rattle, extending over a space of two or two and a half inches square. Below this zone was another, two or more inches in depth, with no vesicular murmur, but, instead, a slight, mucous rattle, particularly when she coughed; below this the respiration was clear, as it was for some space under the sternal portion of the clavicle. The right lung was sound.

“Under this state of affairs I thought it almost useless to prescribe anything. There was, however, one encouraging symptom, she *menstruated regularly*, and while this is the case, I always entertain some hope, no matter how unpromising other things may be. I first truncated a portion of the uvula, as it was much elongated. This had the effect of relieving, at once, the strangling spells of cough. She was requested to take Hasting’s wood naphtha, commencing with twenty drops three times a day, in simple syrup, with five drops of McMunn’s elixir in each. This was gradually increased till she took forty-five drops three times a day. In five weeks she was not benefited in the smallest degree, while her strength had deteriorated materially. She now, successively, tried every variety of cough mixtures, comprising the terebinthinate and balsamic preparations, but all were of no benefit. Her menstrual period went by in June, without any show. By the last of July, her strength was so far gone, and her symptoms progressing so rapidly, that she gave up her house in the city, and came to Chester for the benefit of country air, and to escape from the cares of housekeeping.

“Her situation at that time was, extreme emaciation; the eyes sunk and dark under them; complexion sallow;

pulse 120; stomach rejects almost everything; no appetite for anything; coughs almost half the time; night sweats; orthopnoea, so that she cannot lie below an angle of forty-five degrees; sleeps but little; has chills and fever, sometimes every day; circumscribed spots in the cheeks, with burning of hands and feet; so weak she 'can't walk fifty yards;' unable to get up stairs without assistance, or climbing by the banisters, and stopping every two or three steps; she has become round shouldered and stooping.

"The stethoscopic signs are, in the axilla, extremely loud and tracheal, or cavernous sounds, with a gurgling rattle when she coughs, or endeavors to inspire deeply; pectoriloquy quite distinct; anterior to this is mucous rattle, with bronchophony; posteriorly the same, but less loud. In the portion immediately under this, there was more of a creeping, mucous rale than when examined previously, and slight bronchophony, the remaining portions unaffected, or but slightly so. The expectoration at times is most profuse, particularly if, by means of opiates, the cough is quieted partially for a few hours; is mostly yellowish, heavy, and sinks in water, as would lead. Occasionally, however, for a day at a time, it consists mainly of a greenish yellow matter, streaked with blood, with considerable froth, or mucus, and so offensive to the taste or smell as to occasion emesis.

"I was completely at the end of my resources, when I received the July number of your Journal. I there found two or three cases of consumption, by Dr. Bennett, treated with the cod-liver oil. I at once determined to try it, as something new, but with little hopes of finding any good come of it. It was procured, but such was the irritability of the stomach, that for more than a week its use was not commenced, during which neutral mixture and naphtha were again used, with the effect of quieting

it. She commenced it the 20th of August; a dessert-spoonful three times a day was taken in *froth of porter*. It rested easily and lightly; in a few days it was increased to a tablespoonful three times a day, and finding this to have no unpleasant effect on the stomach, in a few days more it was increased to four tablespoonfuls a day. This quantity was not exceeded. In about two weeks, she found an evident improvement in her appetite; in two weeks more, she found a diminution of her fevers and night sweats, nor did she require so much paregoric to make her cough supportable. She had had a constant blister alternated between the shoulders, and on the scapular portion of the thorax, which she had neglected re-applying for some days, and on the 25th of September she had a severe attack of pleuritic pain, for which I was summoned in haste to see her. The blister was at once applied, and removed the pain, and there was no more return of it.

“At this time, when she was on the use of the fourth pint of oil, the loud, cavernous sound in the axilla was more tracheal than formerly; pectoriloquy was less distinct, and the gurgling rattle was much diminished; bronchophony still well marked in the same situations as formerly.

“The oil was persevered with, a tablespoonful four times a day. At the end of October, there was a great amelioration of all the symptoms; the night sweats had, in a great measure, disappeared; the chills and fevers were gone; the dyspeptic symptoms all gone, and she had a uniformly good appetite. She was ordered to live well, on good, nourishing food, without regard to what it was, if no unpleasant effects were felt in the stomach. Her countenance had assumed a natural, sprightly expression; her strength was increasing; her dyspnoea (difficult breathing) decreasing, and everything appear-

ed favorable. She had rarely taken paregoric on account of the cough, but the blister was kept sore. In another month, there was not a symptom of disease remaining, except some cough and expectoration. And now, 25th of December, she walks about the streets, straight and erect, not as strong as formerly, but can walk a mile or more without great fatigue. She weighs some pounds heavier than she ever did, even in her younger days. Her sallow countenance has all gone, and, although she is pale, she looks sprightly, talks, laughs with, and enjoys the intercourse of her friends as well as before she was sick. Her orthopnoea has disappeared for two months, and she sleeps easy on either side, though rather more so on the left than on the right, and what I regard as among the most favorable signs is, her *catamenia* returned in December.

“She still coughs and expectorates, but not so much in a week as formerly in a day—and the expectoration continues to diminish. The sounds in the chest are little more than a rather loud mucous rattle, with little or no puffing, or bronchophony. In the axilla is a portion in which there is no vesicular murmur, and only the mucous rale, but not so strongly marked.

“The blister has not been applied for six weeks or more, and no inconvenience has resulted from letting it heal up. She is taking a tablespoonful of the oil twice a day. I am fearful yet of an attack of influenza, which is prevailing, to some extent, in her case. It would, in all probability, rekindle the disease. But certain it is she is nearly well. I doubt very much whether any other article could have produced the effects that have resulted from this. Certainly, it is not known, if it exists.\* All known means had been tried, and most faith-

\* Has Dr. Young read Dr. McDowell's work on Consumption, in which

fully, too, before she commenced the use of this; and from no one, nor from all successively tried, did the slightest benefit accrue.

“I find much discrepancy of opinion concerning the kind of oil most medicinal. The kind used in the above case was the fine, clear, white oil. It cannot be procured for less than one dollar a pint. The colored, coarse oil, at about half this price, or less, I have not recommended, because but few stomachs could bear it without nauseating, when continued for the length of time necessary. The effect of the other, instead of nauseating, is to improve the appetite, and the digestive, and assimilating functions, hence it ought to be preferred in all cases. It is to be apprehended that the high price of it will lead the dishonest to making an inferior imitation, that can be sold at a cheaper rate. In cases of this kind, as in many others, the cheap article is dearest in the end. I am trying it in three other *hopeless* cases of consumption, in which all other means have failed. They are all improved, but what will be the result time must develop. They have not taken enough yet to know what it will do. They all find an improvement in the appetite, and two of them express themselves as increasing in strength; their fevers and sweats are diminishing.

“*Chester*, Dec. 25, 1848.”

In an essay on the “History of the Fish-liver Oil,” published in the *Gazette Médicale de Paris*, the following remarks occur, in relation to the composition of cod-liver oil. “Chemical researches have taught us that the fish-liver oil ought to be considered as a very compound medicine. Greasy neutral matter, bilious matter,

he informs us that he has not only cured one case, but scores of them, principally by the *preparations of iron*, good diet, &c. &c.?

iodine, phosphorus, each of them well known as possessing great therapeutic efficacy—also a certain number of organic elements, such as butyric acid, gaduine, and some others, the medical action of which is less known—finally, various inorganic salts, as the phosphate and sulphate of lime, chloride of lime, phosphate and sulphate of magnesia, are the substances of which it is composed.”

In looking at the history of the past, to the experience of the world, it appears that we now have two remedies before us, which promise more success in the treatment of consumption than all others, with proper attention and other hygienic measures. In using these articles, let us not go blindly along, regarding the one or the other, or both, as *specifics*; but, let us be governed by rational principles of treatment, and perhaps ere long—instead of bringing these articles into disrepute—the world may behold thousands of living trophies, as an evidence of the success of the healing art over a disease which destroys such vast numbers of the human race.

I would suggest the addition of from five to ten grains of the citrate of iron, or from five to twenty grains of the subcarbonate of iron, to each dose of the cod-liver oil. The addition of capsicum or seneka, or some other appropriate stimulant may be necessary, in order to make the fish-liver oil agreeable to the stomach. Our own countryman, Dr. McDowell, who is the author of one of the most interesting works extant, on the treatment of consumption, speaks favorably of the preparations of iron; the use of stimulants, as brandy, wine, &c., puccoon root (*sanguinaria Canadensis*), common salt, good living, &c. &c.

When the tubercles produce inflammation in the lung, as evinced by increased stricture and pain in the chest, more incessant coughing, and more feverishness; the remedies recommended above, with the exception of the

cod-liver oil, should be suspended for a few days, till the inflammation is in a great measure subdued by moderate purging, cupping, leeching, or a blister over the seat of pain, or between the shoulders; and in rare incipient cases, where the febrile excitement is considerable, a small bleeding from the arm might be of service. Blue mass or calomel, with extract of white walnut or rhubarb, should be given (repeated, if necessary, once or twice, with intervals of twelve or twenty-four hours), so as to act somewhat freely on the bowels. In the mean time small doses of tartar emetic or ipecac., with tincture of digitalis, or tincture of lobelia, should be given from three to five or six times a day. As the inflammation increases the deposition of tubercular matter, it is of importance that it should be subdued. For the exhibition of the remedies last mentioned, the following recipe may answer the purpose:—

|                 |                               |
|-----------------|-------------------------------|
| R. Water        | one and three-quarter ounces; |
| Tartar emetic   | four grains; or,              |
| Ipecac.         | sixteen grains;               |
| Tinct. digital. | three teaspoonfuls.           |

Mix. Dose, one teaspoonful, from three to five, or six times a day, according to the intensity and persistence of the inflammation. As the inflammation subsides, and before it is thought proper to recur again to the use of the iron and stimulants, the following may be given:—

|                 |                           |
|-----------------|---------------------------|
| R. Water        | two and a half ounces;    |
| Sulph. zinc.    | twenty-four grains;       |
| Tinct. digital. | three and a half drachms; |
| Tinct. lobelia  | three ounces.             |

First dissolve the zinc in the water, then add the other ingredients, and shake the bottle. Dose, a dessertspoonful (or less, if it should nauseate too much), from three to four or five times a day. Sulphate of quinine may be added at this time to the fish-liver oil, in doses of four or

five grains. During the inflammatory condition of the lung, as well as at all others, the cough and pain should be controlled or modified by opiates. Sulphate of morphine may be given, in doses of from one-quarter to one-half a grain or more, if necessary; or, if there is not much febrile excitement, laudanum may be given in doses of from thirty to sixty drops; so as to control or modify the cough and pain, and assist in reducing the inflammation. At other times, paregoric will answer to modify the cough; or, if there is much attendant *chronic bronchitis*, *chronic tracheitis*, or *chronic laryngitis*, with free expectoration, some of the cough mixtures we shall notice, when we come to speak of *chronic bronchitis*, may be used with advantage.

With regard to the incessant use of blisters, issues, setons, and moxas in consumption, I believe they are usually detrimental; principally on account of the irritation and debility they induce, and the undue reliance placed on them to the neglect of more appropriate remedies, to say nothing of their offensiveness, and the attention they require from the patient. They should be regarded as relics of barbarism, unbecoming an enlightened age. The occasional application of a blister, under the circumstances mentioned above, when their use is indicated by the supervention of inflammation of the lung or pleura, in conjunction with the other appropriate means for the reduction of the inflammation, may be of service, and should not be neglected.

Sponging the body with cold water, once or twice a day, when the stomach is empty, especially in warm weather, may be of benefit.

DIET.—The diet of the consumptive is a matter of much importance, and should consist of a liberal range or variety of nourishing articles of diet, which are

easily digested and acceptable to the stomach; but care should be taken that the stomach be not oppressed with more food at a time than can be digested. Animal diet, as the different kinds of flesh; wheat or common corn (maize) bread; Irish potatoes; and other articles which abound in starch and saccharine matter; molasses; sugar; rice; milk; minced pies, with some brandy in them, so as to make them better agree with a weak stomach, and such like articles should be eaten; taking care that they are properly prepared. Common salt (*chloride of sodium*) should be used freely as a condiment; indeed, it has been highly spoken of by some practitioners, particularly by Dr. McDowell, as a remedy in consumption. Other condiments, as pepper, mustard, &c., may be used, at the option of the patient. During the spells of inflammation above noticed, the diet should be rather light for a few days; consisting of tapioca, sago, rice, milk, molasses, arrowroot, and the like.

Free and regular *exercise* in the open air, when it can be comfortably borne, short of inducing fatigue; full and free respiration, frequently fully expanding the chest by full inspirations; and holding the body erect, so as not to bend over and oppress the chest; should receive proper attention. An equable and healthful atmosphere is desirable, so that all the advantages of out-door exercise may be obtained. To those opulent persons who wish to seek a winter retreat away from home, I would say, that Dr. M. Wilson, of the city of Jackson, Mississippi, from personal experience, speaks very favorably of the island of Curaçoa, near the coast of South America, as being remarkable for its equable temperature, and healthful and saline atmosphere. Pensacola, Florida, is also said to be a favorable winter residence for the consumptive valetudinarian. Sea voyages are said to have a favorable influence in many cases.

## CHAPTER V.

## SCROFULA—RICKETS.

SCROFULA.—The cod-liver oil is also very favorably spoken of, especially by German physicians, and some others, in the treatment of the different forms of scrofula; whether the lymphatic glands about the neck, arm-pits, groins, and elsewhere; or, in fact, in all forms of scrofulous disease; whether it affect the lymphatic glands, skin, ends of the long bones, etc. It is used both internally and externally, by rubbing it over the affected parts. In these cases, I think it would be advisable to combine iodide of iron with the fish-liver oil—say three or four grains of the iodide to each dose of the fish-liver oil, three times a day. It would probably be well, after using the iodide of iron for a week or two, to alternate for the same length of time with the subcarbonate or citrate of iron, still taking the cod-liver oil. Diet, as in consumption.

RICKETS.—The German and Dutch physicians, with great unanimity, affirm that the fish-liver oil is, without exception, the best remedy for *rachitis*, in all its stages, and under whatever form it presents itself. “According to Dr. Schmidt, who has most insisted on the advantages of this medicine, in twenty-one rachitic patients which he had treated, at the time when he made known its results, thirteen were cured, and four were in the process of being cured; as to the others, judging from the progress which they had made for the little time they were under treatment, a very favorable prognosis might be drawn.” In relation to this subject, Professor Trousseau, in France,

thus expresses himself: "We have often obtained cures, the rapidity of which surpassed our expectation. Sometimes, after four days of treatment, the sharp pains which the children felt in all their limbs ceased; and the bones which could be bent, acquired, at the end of five days, a considerable solidity." The fish-liver oil may be given to children in doses of a teaspoonful, three times a day. Perhaps it would be well to add one or two grains of the subcarbonate or citrate of iron to each dose, and, if necessary, to make it agreeable to weak stomachs, the addition of a couple of grains of capsicum, or other stimulants. Good diet, and moderate exercise, if it can be comfortably borne, together with other hygienic measures, should receive proper attention.

CHRONIC RHEUMATISM.—I would not mention the subject of *chronic rheumatism* in this connection, if it was not from the fact that we have already incidentally mentioned it, in speaking of Dr. Bennett's views in relation to the therapeutic action of cod-liver oil; and that a large number of German physicians, who have all published their own observations, consider it to possess such an efficacy in this disease, that it surpasses, in their opinions, all other remedies, without excepting the most lauded anti-rheumatics.

"This opinion of different physicians, who have all experimented by themselves, cannot be taxed with exaggeration, if it is considered that amongst these cases there are found numerous instances of rheumatic patients being cured, who, after many years of suffering, and usage of all sorts of remedies, having lost their strength and despairing of cure, were completely cured by the aid of the fish-liver oil.

"*Rheumatic Sciatica*.—The fish-liver oil did not prove less efficacious in this form of chronic rheumatism, which

is generally distinguished by its obstinacy; this is verified by the observations of MM. Knood von Helmenstreit, Rust, Amelung, Munzenthaller, Lettinger, and Spitter.\*

Dr. Mackintosh's experience is not favorable to the use of the fish-liver oil in chronic rheumatism. In addition to the internal use of the oil, it may be well to rub some of it up with some soothing ointment, as the ointment of Jamestown weed ("jimpson weed"), which should be rubbed on the afflicted joints twice a day. *Iodine-jimpson weed ointment* may be applied with profit in these cases.

The cod-liver oil may be taken alone, in coffee, lemon juice, or otherwise, so as to obscure its taste. Admitting it to possess all the virtues claimed for it by its friends, it is to be presumed that, in a great many cases, patients cannot be induced to persevere in its use sufficiently long to secure all the benefits which it is capable of affording.

My esteemed friend, Erasmus S. Broyles, M. D., of Aberdeen, Mississippi, informed me, last year, when I was on a visit to that place, that an indigenous herb, which grew in the neighborhood, was attracting some notice as a remedy for chronic rheumatism. He knew no name for it.

Spirits of turpentine is a common remedy in chronic rheumatism, especially in sciatica and lumbago. It may be taken in doses of from ten to twenty drops two or three times a day; and also rubbed over the affected parts. The "*steam bath*" may be regarded as a valuable adjuvant, as well as acupuncture and electricity; the latter, in cases that appear to be more strictly of a nervous character, and in which there is no organic alteration or enlargement. I would recommend the more general use of puccoon root, iron, quinine, and zinc.

\* Gazette Médicale, and Dublin Med. Press. See also Am. Journ. Med. Sci., Oct. 1848.

Many cases of chronic rheumatism seem, in a great measure, to be brought on by the constant use of spirituous liquors, in which cases the features usually present a florid appearance, and it is, perhaps, to these that colchicum, hydriodate of potash, the warm or vapor bath, and wearing flannel next the skin, are found to be useful. But I am of opinion that a large majority of the cases in the South are of an *anæmic nature*—the system being relaxed, debilitated, the flesh soft, and the appearance of the patient more or less pallid—and demand a very different mode of treatment. These cases appear to be more strictly of a nervous character; indeed, I consider them a species of neuralgia, with less or more attendant anæmia, like many other nervous affections. Perhaps in all, or nearly all, these cases, there will be some degree of spinal irritation, or pain in the back, which may usually be ascertained by firm pressure, made with the fingers, along the spine, from the back of the neck down to the lumbar region; the place where the spinal affection exists being indicated by tenderness, or even pain, when firm pressure is made on it.

For the cure of this form of rheumatism, take a dose composed of subcarbonate of iron, from 10 to 30 grains; 2 or 3 grains of quinine; and from 40 to 60 drops of tincture of puccoon root, twice or three times a day, and continue the treatment till a cure is effected. In those cases of a somewhat more florid appearance, the tincture of puccoon root, with four or five grains of Prussian blue, would, perhaps, be better adapted; or a dose of sulphate of zinc (from half a grain to a grain) may be taken with the puccoon. Iodine ointment, rubbed over the tender portion of the spine every night, or every other night, or put on a sticking plaster and worn, may be of service. Sponging the body with cool water, or the shower bath, every morning, is invigorating, and well calculated to do

much good. Costiveness should be prevented by extract of dandelion, rhubarb, extract of white walnut, or the like.

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## CHAPTER VI.

### TABES MESENTERICA

BEING a scrofulous disease, which affects principally the glands of the mesentery, requires the same general principles of treatment as the other forms of scrofulosis. As a remedy, the cod-liver oil has recently been favorably spoken of. It may be taken in teaspoonful doses three times a day. If it is used at all, I would recommend the addition of the subcarbonate, citrate, or sulphate of iron, in doses of two or three grains of the subcarbonate or citrate, and half a grain to a grain of the sulphate. I would also recommend the free use of iodine ointment, over the region of the abdomen, every night or two. To check the diarrhœa that sometimes attends this disease, paregoric, catechu, krameria, tannin, or a combination of any of these with the paregoric, or laudanum, may be given. If costiveness attends, aperients should be given.

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## CHAPTER VII.

### CHRONIC BRONCHITIS.

IN the malarious regions of the South, in that *anæmic* or *cachectic condition* which is induced by protracted ague and fever, *chronic bronchitis* is not unfrequently a very

troublesome and distressing affection; and, connected with the pale and sickly aspect, is often regarded as the incipient stage of consumption; which latter, indeed, from neglect or improper treatment, is perhaps, not unfrequently, made veritable. This form of bronchitis is sometimes primary, like *serous polyæmia*, not being always preceded by ague and fever. It lasts for months, and even years, and, if not cured, may lead to consumption and death. The trachea (*chronic tracheitis*) and larynx (*chronic laryngitis*), are frequently involved, usually making the expectoration much more copious. There is in every case more or less troublesome cough, with expectoration more or less free; the matter thrown up varying in appearance, frequently of a yellowish white, or a mixture of white and yellow, in some cases occasionally streaked with a little blood. There is usually more or less hoarseness, the voice being somewhat rough and flat.

**TREATMENT.**—Having recently succeeded in promptly curing several cases, in which the patients, having sought relief in vain from several physicians, had almost entirely despaired of a cure, some of them fearing they were treading a similar course to some of their relatives or friends who appeared to be similarly affected, and some of whom suffered much for years, and others, who finally succumbed to consumption, I will briefly make known the treatment I adopt in such cases. I use several mixtures, more or less modified, so as to adapt them to each case respectively. The following may be considered as examples of them:—

|                          |                        |
|--------------------------|------------------------|
| R. Balsam copaiva        | one ounce;             |
| Paregoric                | one and a half ounces; |
| Tincture of puccoon root | one and a half ounces. |

Mix, and shake well just before using. Dose, from

forty to sixty drops, or even more, three times a day, mixed with a little sugar.

|                     |                            |
|---------------------|----------------------------|
| R. Water            | one ounce;                 |
| Sulph. zinc         | two scruples;              |
| Paregoric           | one ounce and six drachms; |
| Tincture of puccoon | one ounce and six drachms; |
| Balsam copaiva      | one ounce.                 |

Dissolve the white vitriol in the water; then add the other ingredients, and shake well just before using. Dose, a teaspoonful, thrice daily, mixed with a little sugar.

|                   |                            |
|-------------------|----------------------------|
| R. Balsam copaiva | one ounce and six drachms; |
| Paregoric         | one ounce and two drachms. |

Mix, and shake well just before using. Dose, thirty-five to sixty drops, three times a day, mixed with sugar.

As the cough subsides, the dose of any of the above should gradually be diminished. Should a subacute inflammatory condition arise, which, however, is rarely the case, the above mixtures should be temporarily suspended, the bowels moved somewhat freely, as with the extract of the white walnut, &c., and the following substituted in place of either of the cough mixtures above.

|                  |                     |
|------------------|---------------------|
| R. Water         | four drachms;       |
| Sulph. zinc      | twenty-four grains; |
| Tinct. digitalis | six drachms;        |
| Tinct. lobelia   | two ounces.         |

Dissolve the white vitriol in the water; then add the other ingredients, and shake it. Dose, a teaspoonful, three or four times a day. If the cough is troublesome, a little sulphate of morphine may be added to the above, say from three to five grains, dissolved in the water with the zinc, before the other articles are added; or, it may be added to the entire mixture subsequently, if desired, after the mixture has been made.

During the treatment, costiveness should be avoided by the use of pills of extract of dandelion and rhubarb,

extract of white walnut, or the like. Conjointly with the other treatment, I am in the habit of advising the *cold dash* to the neck, and between the shoulders, once or twice a day; especially in warm and mild weather. At those times I think it of too much importance to be neglected; indeed, the patient may be profited by a shower bath once a day, taken early in the morning, or on an empty stomach at any time. Perhaps also the best time for taking the cold dash is early in the morning.

In some obstinate cases, in which the fauces become involved, it may be necessary to resort to local applications, conjointly with the above treatment; of which, lunar caustic, either in the solid state or strong solution, is probably the best. If the solid caustic be used, the inflamed or ulcerated surfaces should be penciled over with it, if they can be reached. If the solution be used, it may be applied by means of saturating a piece of sponge fastened to the end of a whalebone, or by lint, or a soft rag, fastened to the end of the finger of a glove, which should be applied to the inflamed or ulcerated surfaces. This should be repeated as often as occasion requires—every day or two, or less frequently, in mild cases.

The affection called *clergyman's sore-throat*, is of the above-described nature, requiring rest from much speaking, and the use of the same means.

Of course, if the concomitant *cachectic* or *anæmic* condition of the system should be very manifest, it should at the same time meet with proper attention by the exhibition of some of the preparations of iron, heretofore noticed as proper for these conditions of the system. In these cases, the iron and cough mixture may be taken together. Good diet, free exercise in the open air, and other hygienic measures which have a tendency to invigorate the system, should receive proper attention.

## CHAPTER VIII.

## HÆMOPTYSIS, OR SPITTING OF BLOOD.

IN some cases of *anæmia*, whether primary or secondary, the sequel to malarious, or other diseases which produce a similar influence, in consequence of the blood-globules being diminished; the blood thereby becoming too thin, with concomitant relaxation of the system, and debility; complicated in some cases with organic disease, as of the liver, spleen, heart, or lungs, &c.,—but not unfrequently, when it does occur, without any of these complications,—bleeding takes place from some of the mucous surfaces, they being relaxed and softened, permitting the thinned blood to pass out by diapedesis or transudation. Transudation may in some cases, also, take place in other parts of the system.

An interesting case of hæmoptysis recently came under the writer's professional care, which has been of some eight years' standing, with occasional temporary improvement, and longer intervals, and then again becoming worse. This case occurred in the person of Mr. C. H. Bean, formerly of Jonesborough, East Tennessee, heretofore a printer by trade, but now a teacher of monochromatic and polychromatic landscape painting. Strange to say, soon after the development of the disease (which he attributes to cold, and close application in the printing office), according to his statement, his medical advisers recommended very abstemious diet, till, for nearly two years, he almost starved himself to death, continually getting worse. He resolved to travel, and use liberal diet, during which time he began to improve; but now

and then would again get worse. From inquiring of him the plans of treatment recommended by different physicians, it appears that none correctly appreciated the nature and proper treatment of his malady, but Drs. Paul F. and Jos. Eve, of Augusta, Georgia, whose directions he had in part only complied with. He used consecutively, and strictly according to the directions, twelve bottles of "*Wistar's balsam of wild cherry*," under which patent nostrum he continually grew worse and worse, till he was very much reduced. He also used a large amount of "*Brändreth's pills*," which, instead of proving beneficial, were injurious. He also tried the "*honey of boneset*," another patent nostrum, which nearly killed him. Mr. Bean talks of writing out his woful experience with these articles, in order that the public may be benefited thereby; that thousands may save their constitutions from being wrecked by these and other nostrum speculations, at the expense of human happiness and human life. Would that he had sufficient character and influence to effect much good. I have put Mr. Bean under the use of the subcarbonate of iron, recommending him to occasionally (say every week or two), alternate with the syrup of iodide of iron, in doses of from twenty to forty drops three times a day, in sweetened water. I have advised him to now and then use other preparations of iron, the moderate use of wine or brandy, good diet, and free out-door exercise. The spells of bleeding are preceded by premonitory symptoms of tickling about the throat, and coughing, with more or less disturbance of the nervous system, as chilliness, unpleasant sensations in the region of the stomach or spleen, &c. On the appearance of these premonitory symptoms, I have advised him to take a dose of quinine (five or six grains) and laudanum (thirty or forty drops), in order to try to avert a spell of bleeding, which comes on, with shorter

or longer intervals of a month or more. In cases of *hæmoptysis*, the blood thrown up is of a red, frothy appearance (till towards, or during the subsidence of the bleeding, it is inclined to a darker hue), and sometimes so copious as to excite considerable alarm. Usually, it is easily and promptly arrested by a solution of sugar of lead and laudanum; or a solution of alum and laudanum, in free doses, repeated as circumstances require. Drs. Copland and Willshire speak highly of the oil of turpentine. Common salt is recommended by some authors. Solutions of sugar of lead, alum, &c., may also frequently be used as a gargle. Mental and corporeal quietude should be observed, and the apartment of the patient ventilated and rendered agreeable. In the case noticed above, there is chronic laryngitis, with a rather copious mucopurulent expectoration, and which might no doubt be greatly benefitted by the local application of lunar caustic. This case will certainly require a very protracted use of the preparations of iron, and other hygienic measures, to effectually change the diathesis of the system, to improve the blood, and to effectually put a stop to this hæmorrhagic proclivity. And here I wish it particularly borne in mind, in all such cases, that the preparations of iron should be persisted in till the health is fully restored, and a pale, sallow appearance has given place to one of redness, freshness, and vigor. Any concomitant visceral disease should receive appropriate attention.

In conclusion, I may remark that the hæmorrhagic diathesis in those of an *opposite condition*, that in which there is *hyperæmia*, or *too much blood*, with a full, florid appearance, requires a different treatment from the one recommended above, occurring in *anæmic* subjects. This requires venesection, purging, sugar of lead, and an abstemious diet.

HYDRO-POLYÆMIA, OR SEROUS POLYÆMIA, heretofore mentioned and described, should be treated with the preparations of iron, generous and varied diet, as recommended under the head of "*Cachexia, Treatment of.*"

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## CHAPTER IX.

### DROPSY—TREATMENT OF.

FOR the several forms of dropsy previously noticed, the general principles of treatment are the same. The muriated tincture of iron, in doses of from twenty to sixty drops for adults, and from five to fifteen drops for children, diluted with water, taken three or four times a day, in conjunction with the use of blue mass, is, perhaps, one of the best plans of treatment. Other diuretics may be alternated with the muriated tincture of iron, after using it four or five days. For this purpose, the vinegar or syrup of squills, sweet spirits of nitre, balsam copaiva, &c., may be used. But in this pale and bloated condition of the system, it seems to demand the tincture of iron more particularly. Blue mass should be given every night or two, so as to purge mildly; but, after giving it for six or eight days in this manner, it should be suspended for a while; and if necessary, in three or four days it may be resumed again. Its influence, however, should be watched with some care; for if it is pushed to salivation, it might prove injurious to the system in this debilitated condition, and injuriously affect the constitution. In the fall of 1848, a lad about thirteen years old, who had been suffering with ague and fever for some time, came under the professional care of the writer. He presented a general dropsical appearance, with *hydrocele*,

which latter I was principally called upon to treat, as his brother had died of the same affection the year previous, and his parents began to fear that this one would soon meet with the same fate. I treated him with the muriated tincture of iron and blue mass; and pressure with a soft pad, and a T bandage. The dropsical effusion was soon absorbed, after which I gave him a mixture of subcarbonate of iron, capsicum, and quinine; he still, now and then, having a chill. He improved rapidly. A gentleman about forty years of age came under the author's professional care, who was suffering with chills and fever; spleen very much enlarged; indeed, enormously so; belly much swelled, from the enlargement of the spleen, and *ascites*; legs very much swelled, &c. &c. I put him under a treatment similar to the above, that is, under the use of the muriated tincture of iron and blue mass, and he rapidly improved. I advised him after the dropsical effusions were removed, to use some of the preparations of iron pretty freely. I merely call a passing attention to these two cases, to show the success of the plan of treatment, and to point out the proper treatment briefly, adapted to cases of these kinds. Authors recommend hydragogue cathartics in dropsy, such as jalap and cream of tartar, elaterium, &c. &c.; but as this practice seems more directed to the removal of the *effects* of certain morbid conditions, without removing the cause, if principally relied upon, it often fails of success; and in many cases, no doubt, proves injurious; or at least suffers the morbid condition which gives rise to the dropsy, to continue. The concomitant visceral affections, as well as the general condition of the system, should meet with appropriate attention. The diet should be somewhat restricted, though sufficiently nutritious, till the dropsical effusions have been removed; then it should be improved and of good quality.

## CHAPTER X.

ENLARGEMENT OF THE SPLEEN AND SPLENIC  
CACHEXIA.

ENLARGEMENT OF THE SPLEEN is well known to be of common occurrence in the malarious regions of the South; occurring especially in ague and fever, or congestive fever; frequently remaining *enlarged*, and not unfrequently becoming *hypertrophied* or *indurated*, after these diseases have been cured. When the enlargement is recent, or has only been of short duration, it depends on *engorgement*, *hyperæmia*, fulness of blood: when protracted, or of long duration, it may become *hypertrophied*, increased in substance, not merely depending on engorgement for its increased bulk; or, it may become *indurated*, &c.

In recent cases of engorgement of the spleen, it may be reduced by free doses of quinine (from six to fifteen grains) taken three or four times a day. The bowels in the mean time should be kept in a soluble condition by the use of mild cathartics; as extract of white walnut, &c. If the quinine should act on the bowels in the manner of a cathartic, this effect should be controlled by paregoric, or other opiates. According to one writer, whom we have heretofore quoted, the *cold dash*, over the region of the spleen, is effectual in reducing the hyperæmic condition of this viscus; and the *general cold dash*, in curing intermittent fever. If the patient is not anæmic, but of a somewhat florid appearance, rather free venesection—but not often repeated, if at all necessary to resort to it more than once; and, when necessary, with an interval of several days—may be of considerable service, in

conjunction with the quinine and cathartics as above advised. I have noticed the engorged spleen diminish in size considerably, in a few minutes after venesection. A good dose of quinine should be given shortly after the bleeding. In those who are enfeebled, or of a nervous temperament, and, perhaps, in others, a teaspoonful or two of sulphuric ether has the effect of reducing the engorged spleen considerably, within a few minutes after it is taken; but I believe this is not likely to be so permanent as when reduced by the other means above mentioned.

When the engorgement is more protracted, and the *anæmic condition* (*splenic cachexia*) is manifest, a combination of quinine and subcarbonate of iron (quinine grs. five to ten; sub. carb. iron. grs. twenty to sixty; which latter may occasionally, for a short time, be alternated with the sulphate of iron) should be given three times a day—which may be taken in molasses, or otherwise. A mild cathartic may be given every third night, if necessary; but constant and active purging should be avoided on the one hand, and costiveness on the other. Cupping and leeching over the region of the spleen may be of some service; as also may a couple of drachms of quinine, incorporated with mercurial ointment so as to make a plaster, which may be worn over the region of the spleen for a month or two; but, according to the writer's experience, these local means are overrated. This means may also afford relief by the pressure and support it gives to the enlarged spleen. Or, iodine ointment may be rubbed over the same region, once or twice a day. But, whatever other articles are used, I would insist particularly on the protracted use of large doses of subcarbonate of iron, with some aromatic or stimulant to make it agree well with the stomach; such, for instance, as powdered capsicum, pulverized cinnamon, and the

like. It may be well, occasionally, to alternate with other preparations of iron; as the tartrate of iron and potassa, in doses of from fifteen to thirty grains, with the capsicum or cinnamon powders; the sulphate of iron, &c. &c. Dr. Cartwright, of Natchez, Mississippi, speaks very favorably of the use of cod-liver oil in enlarged spleen; and, in conjunction with some of the ferruginous preparations, it is no doubt well adapted to this abnormal condition of the spleen, and also to the cotemporary anæmic condition of the general system. A dose of the subcarbonate of iron may be added to a tablespoonful of the oil, and taken thrice daily. When the spleen is very much enlarged, well-adjusted pressure by means of a bandage, so that the pressure is tighter on the lower side of it, may afford much relief, and be of service. If the spleen should be *hypertrophied*, the ferruginous treatment should be adopted, as above. In these cases, it might be well to insist more on the use of iodine ointment over the region of the spleen; and now and then alternate with the other preparations of iron, the iodide of iron, internally. The iodine ointment may be rubbed over the region of the spleen every night, but a better way of using it is by spreading it on a sufficiently large piece of buckskin—near the edges of which is spread Burgundy pitch, so as to make the plaster stick—which should be worn, and renewed every few days. The same treatment is proper for the *indurated spleen*. If the induration is more than very slight, we need not expect to entirely remove it, but by the use of the above means we may improve the general health. The diet should be of a good and nourishing kind, and moderately indulged in. It should be somewhat restricted in recent cases of *engorged spleen*; yet the system should be properly nourished. In the protracted or very chronic affections of the spleen, of whatever nature, if there is much anæmia

present, the diet should be liberal and of good quality ; but not used to such an extent as to oppress the stomach, or cause an unpleasant sensation in it after eating. Fluid diet disagrees with some. Of course, in cases of this kind, the diet should be dry.

---

## CHAPTER XI.

### LIVER—CHRONIC ENLARGEMENT AND INDURATION OF.

**TREATMENT.**—In similar conditions of the system to those noticed when treating of the spleen, above, the *chronic enlargements or indurations of the liver* require the same treatment: *i. e.* the protracted use of iron, iodide of iron, ointment of iodine over the region of the liver, and aperients, when necessary to obviate costiveness. In these cases, the preparations of mercury have often been given to an undue extent, increasing the cachectic condition of the patient, and otherwise acting injuriously. If the case is recent, the complexion of the patient somewhat florid, an occasional dose of calomel or blue mass may be of service ; but in the chronic form, with a pallid appearance of the features, or, in other words, when the patient is *anæmic*, not a few constitutions have been forever ruined by them. This is one form of disease, in which calomel and blue mass have been a great curse in the malarious regions of the South.

## CHAPTER XII.

## NERVOUS DISEASES.

IN the different *neuralgic affections*, the attendant pains are most commonly more or less lancinating and intense; though, not unfrequently, they are rather obtuse: they are also usually relieved by pressure, but in some cases pressure increases the pain;—and, when this is the case, we should be careful not to refer the pain to inflammation, as this might lead to improper treatment. Indeed, the persistent irritation in a part, for some time kept up by nervous derangement, may produce inflammation, and then we have a double indication to fulfil. One important characteristic of the neuroses generally, is, that they are nearly always *periodical*; that is, they manifest themselves by *spells*, with longer or shorter intervals; though, in some cases, there is more or less pain all the time; yet they have their periods of *exacerbation* or *increase*, which may last for a longer or shorter time, say less than an hour, several hours, or longer, and then subside, to recur again about the same time the next ensuing day, every second or third day, or at longer and irregular periods, as once in a few weeks, or months. Many persons are subject to a *nervous headache*, which recurs in this manner. In some cases, pain over one eye (*frontal neuralgia*), or on one side of the face, recurs in this manner. Indeed, nervous diseases may affect any part of the body, though commonly they are more apt to affect certain parts than others. When the stomach is the principal location of the pain, it is called *gastralgia*;

when the liver, *hepatalgia*, etc. *Spinal irritation* is perhaps more or less connected with all the nervous diseases which affect any portion of the body or limbs, from the neck downwards. It is a very common affection in nervous females, and may be either *primary* or *secondary*. It is frequently observed in some portion of the upper half of the dorsal region, between the shoulder blades. When speaking of chills and fever, we remarked that spinal irritation was quite common in this region of the spinal column, especially in protracted cases, or after the chills had subsided. In these cases, the affected portion of the spine is found, by firm pressure along the spinal column, especially close along on either side of it. In many of these cases, the nerves, which originate from the region of the spinal marrow which is affected; and extend around the sides of the chest, also participate in the morbid condition, and we then have *dorso-intercostal neuralgia*, and this influence may extend to the liver, stomach, heart; in the latter case producing palpitations, etc. etc. (See pages 51 and 52.) When the uterus, spleen, &c. (see pages 55, 56, and 165) are diseased for a length of time, from the constant irritation transmitted to the spinal marrow in that region called the loins, it may become *secondarily* affected; the origin of the nerves which are distributed to the lower extremities may thus become affected, and cause pains and cramps, or cramps in different parts of the lower limbs, or hips; or, by means of this reflex action, the stomach, head, heart, sides, &c., may manifest their sympathies. In this manner, by their nervous connections or communications, one part of the system sympathizes with another.

**TREATMENT.**—In the treatment of the different neuralgic affections, the same general principles are appli-

cable, with some modifications adapted to the general condition of the system, and the part or parts principally affected. Of course, when they are secondary, are produced by some visceral disease or local irritation, our attention should also be directed to the removal of this latter condition. The principles of treatment laid down heretofore for *intermittent fever*, are applicable to the *neuroses*; and, therefore, to prevent unnecessary repetition, I would refer the reader to the different conditions noticed in the treatment of that disease, requiring modifications adapted to each, and request a careful examination of them. For instance, if the *complexion of the patient is rather florid* than pallid, as is frequently the case in those who are afflicted with sick headache, or with pains in sound teeth (*odontalgia*), which return periodically, or other forms of neuralgia, quinine, or quinine and sulphate of zinc, taken two or three times a day, with opiates, if necessary, for temporary relief, and aperients, to obviate costiveness, will generally succeed in curing them. If the neuralgic affection is connected with a *pale, leucophlegmatic, or anæmic condition*, the free use of iron, as the subcarbonate, with quinine or other tonics, will be necessary. These are given for the purpose of effecting a permanent cure; but, when necessary for temporary relief, or to avert a spell, either before or when the premonitory symptoms show themselves, opiates should be given, especially if the intensity of the pains demands them. Excessive costiveness should be obviated by the use of aperients; such as the extract of butternut, extract of dandelion and rhubarb, tincture of the root of the common silk weed, black root, &c. &c. In addition to the articles we have already noticed in the treatment of intermittent fever, I would also refer to others, to be mentioned farther on in this work. (See Ch. XVI.) If there is any cotemporary visceral disease,

as of the spleen, liver, stomach, uterus, &c., the reader is referred to the treatment adapted to these. In these cases, the treatment proper for the removal of the visceral disease, is also proper for the concomitant neuralgic affection; which latter may, however, require opiates for temporary relief; but they should not be indulged in too much nor too long, if they can be done without, conveniently. As the visceral disease yields, the neuralgic affections usually subside.

With regard to *external medication*, especially in the *spinal irritation* of the upper portion of the dorsal region, a very important adjuvant to the internal remedies is, the *cool* or *cold dash* between the shoulders, and on the nape of the neck and head; or a *cool* or *cold shower bath*, especially in the warm or mild seasons of the year. If the patient is too feeble to bear the shower bath, the body may be sponged with cool water. The application of the water, either way, should commonly be attended to early in the morning, or on an empty stomach. Generally once, and sometimes twice a day, is sufficiently often to resort to this external application of cold water. If ladies who are afflicted with nervous diseases of this nature, and who visit the "*Springs*" for their health, would attend more frequently to these directions, they would, no doubt, be much more profited by their visits to these places. Inunction with iodine ointment along the affected portion of the spine, once a day, at night, perhaps, being the most convenient and proper time—or, the ointment may be spread on buckskin, with some adhesive substance (as the Burgundy pitch, or adhesive plaster), near the edges of it, so as to make it adhere; the plaster being renewed every three days—is a remedy often of much service. Cupping or leeching, every few days, repeated blistering, the application of tartar emetic—sprinkled on a plaster of Burgundy pitch, so that it

may cause pimples, or sores, after remaining on a few days, which are then allowed to heal, and the tartar emetic applied again and again in this way—frictions with liniment, pulverized Cayenne pepper, mustard, spirit of turpentine, opodeldoc, narcotics, the application of the actual cautery, or red-hot iron, &c. &c., are means not unfrequently resorted to with advantage; but these should not be exclusively relied on, to the neglect of means addressed to the general system. Free out-door exercise, and everything that is calculated to invigorate the system; should receive appropriate attention. The diet should be nutritious.

EPILEPSY is most commonly of a neuralgic character, and requires the same treatment as above—with the exception of counter-irritation. Some years ago, the author cured a case of *epileptic fits*, which had been of several years' standing, by a combination of the sulphate of quinine (three grains) and sulphate of zinc (one grain), three times a day; and, every third or fourth night, the exhibition of an aperient dose of pills, composed of calomel, rhubarb, and aloes, for a few weeks. It occurred in the person of a lady of middle age, of rather slender form, and nervous temperament. There was dilatation of the pupil of one eye. The internal use of oil of turpentine, lunar caustic, and many other articles, is recommended by different authors. When they depend on mechanical injury, a surgical operation may be demanded for their relief.

When any of the neuroses are of long standing, they usually require perseverance in a protracted treatment.

PUERPERAL CONVULSIONS.—Before quitting this subject—for *puerperal* or *child-bed convulsions*, occurring in those of slender frame, lax fibre, and nervous tempera-

ment, I would recommend the use of quinine and laudanum, in doses of eight or ten grains of the former, and fifty to a hundred drops of the latter, repeated every few hours, lessening the dose of laudanum till the system is sufficiently brought under the influence of these remedies. The quinine should then be used in smaller doses (four or five grains) three or four times a day; and the laudanum as occasion requires. If the patient is *anæmic*, subcarbonate of iron and quinine should subsequently be made use of. To arrest the *fits*, in addition to quinine and laudanum, ether, in one or two teaspoonful doses, may also be given, in half a glass of sweetened water; some of it may also be breathed. Subsequently, to avoid or remove costiveness, aperients should be given as occasion requires.

It may be proper to remark, that I can quote no authors to sustain me in the treatment here recommended; but the writer's experience, founded on what he considers correct principles of medicine, has proved its success. It is an almost universal practice amongst authors to rely principally on very copious abstractions of blood in all cases of this affection. This is certainly a very great error. In those of *sanguine temperament* and *full habit*, it may be absolutely necessary to resort promptly to free venesection. After this, I would venture to recommend a large dose of quinine (ten or fifteen grains), and sulphate of morphine (one grain); and the liberal application of cold water to the head, and that the feet be put in warm water. Active cathartics should also be given in cases of this latter kind. For this *dangerous affection*, the aid of a physician should always be sought, and that promptly, too.

From my limited experience with *puccoon root*, I am inclined to think favorably of its influence in many of

the *chronic forms of the neuroses*. The dose of the tincture is a teaspoonful or less, three times a day, either alone, or with a solution of sulphate of zinc, quinine, &c.

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## CHAPTER XIII.

### ATONIC DYSPEPSIA.

THE general condition of the system in this form of indigestion is very analogous, if not identical, with that form of disease which we have already noticed, called *chlorosis*. It appears quite certain that they are identical. Youths, girls, and young men, about the age of puberty, are most frequently the subjects of it, according to the writer's experience, which he believes coincides with that of others. The treatment proper for chlorosis (which we have already noticed), is proper for *atonic dyspepsia*. As in chlorosis, the patient is of a pale, tallowish appearance, and is easily fatigued by sudden or violent exercise, which produces hurried respiration, and a sensation of exhaustion or nervousness.

Before quitting this subject, I will remark that the excessive use of coffee is a very common cause of dyspepsia in the South; and, of course, in cases of this kind, its use must be greatly modified or entirely abandoned, in order that a cure may be effected. The excessive use of tobacco may be mentioned, as another cause of dyspepsia. Many cases of this kind, as well as the one to be mentioned presently, are connected with, or there exists at the same time, spinal irritation, or pain between the shoulders, and perhaps some form of nervous affec-

tion, as pain in the side, shoulder, head, stomach, etc., which is worse at some times than at others.

In the treatment of cases of this kind, the cause should be abandoned, which in many cases will go far to afford relief; but as the general health will, in all probability, have become more or less affected, it may be necessary to use some of the preparations of iron, with some vegetable tonic; as, the subcarbonate or sulphate of iron, with quinine, extract of gentian, or the like; or, if the features are rather florid, the Prussian blue, in four or five grain doses, may be preferable; to which, if there should be concomitant spinal irritation or neuralgia, a dose of puccoon root may be added, or, indeed, in many cases, this article may be principally relied upon.\* To procure temporary relief from the burning which sometimes takes place in the stomach, in consequence of a superabundance of acid, some of the antacids, or alkalies, may be used, as supercarbonate of soda, carbonate of potash, prepared chalk, ammonia, ashes, or ley, etc. A good preparation for this purpose, is a solution of supercarbonate of soda in water, and enough tincture of cinnamon, or compound tincture of cardamoms added, to render the taste of the solution pleasant. The diet should be regular, somewhat restricted, but nutritious.

R. Puccoon root (pulverized) two hundred and seventy grains;  
Prussian blue (pulverized) two hundred and seventy grains;  
Liquorice (pulverized) a sufficient quantity.

Make into one hundred and eighty pills. Dose—two of the pills, two or three times a day.

The other form of dyspepsia, to which allusion was made above, consists in a chronic inflammation of the stomach, with fullness and pain at the pit of it, the pain

\* I notice that J. L. Mothershead, M. D., has recently cured two obstinate cases of dyspepsia, by the use of the puccoon. *Western Lancet*, May, 1849.

being considerably increased by pressure. A hearty meal is apt to increase the pain. In these cases, or at least in many of them, the features have a peculiar florid appearance. The bowels are usually costive, in some cases obstinately so.

For the cure of these cases, lunar caustic, with extract of jimson (*stramonium*), or extract of henbane (*hyoscyamus*), either in pills or solution, is probably superior to any thing else. The pills may be made as follows:—

|                               |                                    |
|-------------------------------|------------------------------------|
| R. Lunar caustic (pulverized) | two drachms;                       |
| Extract of stramonium         | two to two and a half drachms; or, |
| Extract of hyoscyamus         | six drachms to one ounce.          |

Mix well, and make into one hundred and twenty pills, and take one three times a day. If the patient prefers taking these articles in solution, the same proportions as above may be added to a pint of water, and a teaspoonful of the solution (put in two or three tablespoonfuls of pure water when it is to be taken) given at a dose. The sulphate of zinc, with either of the extracts above, may be used in the same proportion as the lunar caustic, and alternated with the latter every week or two, especially if discolorization of the skin is apprehended; or to avoid this, if it should be necessary to use the caustic for a long time. If the bowels are very costive, a dose composed of from ten to twenty grains of calomel, with ten or fifteen grains of rhubarb, or some other aperient, should be given every fourth or fifth night, or as occasion requires. To prevent the too frequent repetition of the calomel, in cases which are very obstinately costive, a teaspoonful of the following may be taken, when it is thought proper.

|                                |                      |
|--------------------------------|----------------------|
| R. Compound spirit of lavender | two fl. ounces;      |
| Croton oil                     | ten or twelve drops. |

Iodine ointment may be rubbed over the region of the pit of the stomach every night or two; or be worn on a

buckskin plaster, made by putting Burgundy pitch around the edges. These cases usually require the treatment to be continued for months. The diet should be light, easily digested, and such as agrees well with the stomach, and taken in but small or moderate quantities at a time. Stimulants, as brandy, etc., should be avoided.

In that form of dyspepsia which occurs amongst the opulent, or "high livers," in the North, in Europe, and elsewhere, strict attention should be paid to dieting, or, in other words, living on abstemious diet, and that which agrees with the individual.

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## CHAPTER XIV.

### LEUCORRHEA, OR WHITES.

WHETHER as an *effect* or *cause* of any of the *cachectic* conditions above noticed, whether called *anæmia*, *chlorosis*, etc etc., *leucorrhœa* is well known by the physicians in the southern States to be one of the most common and troublesome maladies to which females are liable; in a good many of which there is a greater or less degree of falling down of the womb (*prolapsus uteri*), with less or more attendant chronic inflammation and increased size and weight, especially of the neck and mouth, of this organ. These conditions give rise to unpleasant sensations of weight, bearing down, and pains in the region of the womb, which also cause pains in the loins, inside of the thighs, or, indeed, by reflex action, sympathies may be set up in almost any part of the system, giving rise to various forms of nervous affections; as, hysterics, palpitations of the heart, faintness, affecting the stomach,

head, or other forms of neuralgia, which we have already noticed. These and other diseases of the uterus entail more protracted ill-health, suffering, and debility—to which the absurd and deleterious practice of using snuff often largely contributes; not unfrequently ending in consumption, or serious diseases of the womb, and finally death—on females in the South, than all other diseases put together. From the observations of the writer, whose experience is corroborated by southern practitioners, the most prolific source of these different morbid affections of the uterus is want of proper attention in parturition, either from neglect or improper interference of *ignorant* or *unqualified* “*midwives*.” I think it is time for southern ladies to begin to look to their own interests and safety in these matters, and more generally employ competent physicians during their “*confinement*,” unless the females who act in this capacity will more generally qualify\* themselves for midwifery practice. True, these remarks are not so applicable to some female midwives as to the large majority of them; some having taken pains to acquire information in this department: but, previous to assuming this responsible position, they should place themselves under the instructions of competent medical teachers, and devote a sufficient length of time and study to acquire that knowledge which will enable them to practice “*midwifery*” with safety to others and with credit to themselves. I very much desire to see the female part of our community avoid, as much as possible, the evils above noticed, which not only detract from their enjoyment of life, but cause not a few of their lives to be more or less unpleasant or miserable; and finally, after less or more protracted suffering

\* It appears that a Miss Elizabeth Blackwell has recently obtained the degree of M. D., at Geneva Medical College, being the first instance of the kind that has ever occurred in the United States.

and distress, to reach a premature grave. I hope the above remarks, in relation to a very worthy portion of our community (female midwives), will not detract from their usefulness, but that they may profit by these suggestions and become more really useful.

In a warm, relaxing climate, even under favorable circumstances, it is to be expected that these diseases will less or more frequently occur, especially in those who do not take sufficient and active exercise, and from improper dressing, as tight lacing, and a vast amount of unnecessary clothing about the hips, in accordance with a fashion I am glad to see is passing away.

**TREATMENT.**—In these cotemporary or concomitant affections of the uterus, especial attention should be paid to the accompanying *cachectic condition* of the system. For this purpose the ferruginous preparations, as directed under the head of "*Cachexia, Treatment of*," should be resorted to, and other means calculated to invigorate the system, and improve the general health. The shower bath, if the patient is not too feeble to bear it, or if so, sponging the entire person, and free out-door exercise in good weather, and the use of nourishing diet, are means that should receive due attention.

The *local treatment* consists in the use of various astringent injections into the vagina. I have found a *solution of chloride of lime* (bleaching powder), or a *solution of chloride of soda*, diluted so as to produce a gentle not unpleasant warmth in the vagina, superior to any other articles which I have used, in this manner, in leucorrhœa. The proper strength of these solutions may be pretty nearly appreciated by taking a small quantity into the mouth. The vagina should first be washed out by tepid water and soap, thrown up by means of a female syringe. She should then lie down, with her

hips elevated (which may be done by placing a couple of pillows, or other articles that will answer the purpose, under them), and inject one of the solutions freely into the vagina. She should remain in this position for an hour, in order that the solution may remain in contact with the diseased surfaces, which is probably most frequently, and particularly, the neck of the womb. This should be practiced two or three times a day, usually twice may suffice. It should be borne in mind that the treatment generally requires to be persevered in for a long time. If this fails, perhaps the most effectual treatment is the application of the solid nitrate of silver to the neck of the womb, by means of a speculum. This should be done by a competent physician. Amongst other astringents which are frequently used, I may mention solutions of sugar of lead, sulphate of zinc, and alum, decoction of oak bark, &c. &c. If there is much tumefaction of the womb, inunction over this region, or in the groins, once or twice a day, with iodine or mercurial ointment, is often of considerable service. If, at any time, there should be considerable uterine pain, opiate injections into the vagina may contribute to afford some relief. Cupping or leeching, over the region of the loins, is recommended by authors, but I believe their favorable influence is generally overrated.

We have already remarked that the patient should persevere in the use of the preparations of iron, internally. For the sake of convenience to the reader, I may here observe, that the following formula, alternated every week, with some of the other formulas above referred to, under the treatment of the cachexia, is a very good one in leucorrhœa :—

|                         |                |
|-------------------------|----------------|
| R. Subcarbonate of iron | five drachms ; |
| Sulphate of iron        | two drachms ;  |
| Cinnamon, pulv.         | four drachms.  |

Mix, by rubbing well together in a mortar. Dose, from fifteen to twenty-five grains, three times a day, in syrup or molasses.

If, during the above treatment, an acute, or subacute inflammatory condition of the uterus (or, indeed, any other part) should arise, temporary, but not too active antiphlogistic treatment, should be resorted to. Venesection, if the patient is not too feeble, preferably in the foot, two or three doses of mercurial cathartics, combined with rhubarb, extract of butternut &c., given at intervals of twelve or twenty-four hours; morphine, if necessary for the relief of pain; the semicupium or tepid hip-bath; and bathing the feet and legs in hot water, are the means principally to be relied upon for the reduction of this inflammatory condition of the uterus. The French recommend the direct application of leeches to the mouth of the womb, which may be done by the use of the speculum.

A blister to the loins, where there is considerable aching, or the application of a flannel cloth, dipped in warm spirits of turpentine, or cupping, may afford some relief. Mercurial ointment should be rubbed over the region of the uterus, and in the groins, twice a day, for several days; and then iodine ointment used in place of it, till the *metritis* (inflammation of the womb) subsides, or is perfectly removed. Warm poultices over the region of the womb, just above the pubes, should also be occasionally applied. If the patient is very feeble, with small, weak pulse, laudanum should be given, in free doses, to allay the pain in the womb and loins, or sick stomach; it also acts favorably in assisting to remove the inflammation. It should be repeated as occasion requires. Of course, in the mean time, the use of the preparations of iron must be suspended, till the metritis has greatly subsided. If there is considerable debility, and the

anæmic condition prominent, the use of iron with quinine may be commenced earlier; or, indeed, under these circumstances, the quinine may be used all the time. When the inflammation has considerably subsided, and where there is any doubt as to the propriety of the resumption of iron, hydriodate of potass, in doses of from three to five grains, three or four times a day, dissolved in half a glass of sweetened water, or the syrup of iodide of iron, may be taken three times a day, in doses of from fifteen to twenty-five drops, in sweetened water.

Aperients, as the extract of white walnut, &c., should be given at any time during the course of treatment, if costiveness demands their use. The leucorrhœal discharge may be either from the vagina or womb, or both. According to Dunglison, Professor Huston, of Philadelphia, "has seen more advantage from injections of oil of turpentine than from any other." It may be prepared for this purpose, as in the following:—

|                        |                            |
|------------------------|----------------------------|
| R. Oil of turpentine   | one drachm                 |
| Mucilage of gum Arabic |                            |
| Water, each,           | one and a half fl. ounces. |

Mix and, with a female syringe, inject into the vagina, twice a day.

The *cold dash* to the loins and pelvis may be of service, repeated once or twice a day. For the debilitated condition of the system, the *cold shower bath*, or, if this cannot be used, sponging the entire person with cool or cold water, once or twice a day, may considerably contribute to restore the health of the patient.

In CHRONIC METRITIS, the womb is enlarged in a greater or less degree; its substance is more dense, and it is consequently heavier than natural: hence the *prolapsus uteri*, in a greater or less degree, which so often

attends this condition, and the pains in the region of the womb—represented sometimes as “bearing-down pains,” at others somewhat lancinating, but usually rather obtuse or aching—the loins, inside of the thighs, and sometimes elsewhere. The prolapsus, or coming down of the womb, is in many cases slight; in others again, it comes still lower, and in some presents itself at, or even external to, the *os externum*. These conditions cause inflammation and ulceration of the neck of the womb, and perhaps the vagina, and are therefore attended with leucorrhœal discharges, of a whitish, slightly yellowish, or sometimes somewhat greenish appearance.

In the South, a large majority of these cases are accompanied with an *anæmic* condition of the system; for this variety, the treatment has already been given. I should have added that the patient should lie much in the recumbent posture, with the hips elevated, and take exercise by rolling about on a carpeted floor. These directions will also apply to the other variety, for which we will now give the treatment. The distinction which I wish to make here is, that, in this variety, the *complexion* and *appearance* of the patient is florid, usually presenting more or less fullness; and the condition of the uterus produces more or less febrile excitement.

At the commencement of the *treatment*, if the system is not too much debilitated, a moderate venesection may be serviceable. Whether this is resorted to or not, give an emetic of tartar emetic, or tartar emetic and ipecac combined, every day; and four or five grains of calomel every night, for four or five nights, unless it should act on the mouth, and then every other night, for a week or two (unless it should affect the mouth); then perhaps every third night, or every fourth night, may suffice. From an eighth to a quarter of a grain of tartar emetic should be given in solution, every two hours, during the

day. When the febrile excitement of the system has been controlled by these means, which also modify the local inflammation, and when the features begin to present a rather whitish, or fair appearance, give five grains of hydriodate of potash, in half a glass of sweetened water, three times a day. Should the bowels become costive at any time, three or four grains of calomel or blue mass may be given at bed-time. Ointment of iodine and hydriodate of potash should now be rubbed over the region of the womb every night. The diet should be very light. This treatment should be persevered in, be the time long or short, till a cure is effected. As before remarked, the recumbent posture should be mostly maintained, with the hips somewhat elevated; and the patient should mostly take exercise by rolling about over the floor; and occasionally by putting the feet as high up on the wall as she can conveniently. This means will tend to keep the womb in its natural position, and favor the reduction of the inflammation. If the prolapsus is very slight, more exercise may be taken on foot. In those cases in which the womb comes down, it should be pushed back to its natural position. The leucorrhœal discharges should be washed away with tepid soap and water; and if there is any burning sensation in the region of the womb or vagina, some relief may be obtained by injecting a weak solution of sugar of lead; to which may be added, if it be severe, from thirty to sixty drops of laudanum, or half a grain of the sulphate of morphine.

## CHAPTER XV.

## DYSMENORRHŒA, OR PAINFUL MENSTRUATION.

DYSMENORRHŒA, or *painful menstruation*, is so well known by those who have suffered with it, or those who have been called upon to treat it, that a description here would be unnecessary. I may remark, however, that, at each return of the catamenia, there is a greater or less degree of pain in the womb, which is in some cases most intense. There is, also, pain in the loins and inside of the thighs. The pain is most severe during the first two or three days; in some milder cases not lasting longer than a day, especially if proper means are used to control it. The pains are now and then worse, or come on by spells. The discharge from the womb is small in quantity, more especially for the first two or three days, there being in some cases clots of blood, and sometimes, also, a whitish membrane, or whitish shreds; the agony of the patient being greatest as these are forced out through the mouth of the womb. In some cases there is considerable febrile excitement.

**TREATMENT.**—The day before the appearance of the menses, the female should take a mild cathartic; as the extract of white walnut and calomel, or calomel and rhubarb, or extract of black root, &c. When the catamenia make their appearance, and there is attendant pain, give about six grains of quinine with a quarter of a grain of sulph. morphine, or ten grains of Dover's powder. If there is much febrile excitement, a moderate venesection, preferably from the foot, may be neces-

sary. The pain should be controlled by opiates, repeated as often as occasion requires; and costiveness should be prevented by the use of aperients. Mercurial ointment, rubbed over the region of the womb twice a day, may contribute to afford relief.

But it is during the intervals, or the time that intervenes between the catamenial epochs, that we are to expect to cure this disease. The treatment during this time will require some modification, according to the condition of the system. In many cases there will be found to be more or less *anæmia*; which will require the use of some of the preparations of iron, as the subcarbonate, ten to twenty grains, with quinine, three grains, and from forty to sixty drops of the tincture of the puccoon root. This dose should be taken three times a day. In those who are not anæmic, the puccoon, either alone or combined with quinine, or the following, should be given:—

|                             |                  |
|-----------------------------|------------------|
| R. Tincture of puccoon root | fourteen ounces; |
| Water                       | two drachms;     |
| Sulphate of zinc            | one dracham.     |

Dissolve the zinc in the water, then add the solution to the tincture of the puccoon. Dose, fifty drops, in a wine-glass of water. Three grains of quinine may be put in the wine-glass of water, before the above is added, in obstinate cases. If the stomach is irritable, a little compound tincture of cardamom, paregoric, tincture of cinnamon, or the like, may be added, or put in the mixture, before it is taken. In cases of a rather sanguineo-nervous temperament, the following acts somewhat favorably:—

|                    |                               |
|--------------------|-------------------------------|
| R. Water           | eight ounces;                 |
| Hydriod. potas.    | one to one and a half drachm; |
| Extract. stramonii | fifteen grains. Mix.          |

Dose, one tablespoonful, in half a glass of sweet or pure

water, three times a day. If the extract of the jimson affects the head, its use should be suspended for two or three days. I would recommend that a dose of the puccoon be taken with the above, if it should be used; but the puccoon alone, is perhaps superior to any other single article, in most cases. In those of a full habit and sanguine temperament, a venesection just at the commencement of the catamenial epoch, for two or three periods, and a mercurial cathartic, may go far towards controlling or modifying the affection, till the system is brought under the influence of the other remedies. A very good article to obviate costiveness, at any time, is the extract of white walnut. Dr. McIntosh speaks favorably of gradually dilating the mouth of the womb, by means of silver bougies, of different sizes. He seemed to be of opinion, that most cases of dysmenorrhœa, were caused by the smallness of the mouth or neck of the womb.\* Though this may be true in many cases, it is far from being universal. The bougies may also act favorably by the pressure on these parts; but if used, the means

\* M. RAYNARD has presented to the Acad. of Med. of Paris, a memoir on the subject of *Sterility and Dysmenorrhœa*, of which the following are the conclusions: 1st. The cavity of the neck of the womb may be the seat of strictures, congenital or accidental, which are, to a certain extent, analogous to strictures of the urethra. 2d. These modifications in the structure of the uterus induce serious disturbances in its functions, rendering menstruation and conception painful; and, when occlusion is complete, impossible. 3d. This state of the uterine neck is generally indicated by a thick, white, viscid discharge. 4th. This condition, by keeping up continued uterine congestion, may give rise to serious organic diseases. 5th. Stricture of the uterine neck may be suspected in cases of dysmenorrhœa and sterility, which cannot be otherwise accounted for. 6th. The treatment of urethral stricture, is equally applicable to that of the uterine neck. 7th. The best treatment consists in the introduction of graduated bougies, by means of the speculum, and allowing them to remain for an hour or two. 8th. If this should fail, we must have recourse to incision of the neck.—*Prov. Med. and Surg. Journ.*, Jan. 1848. See also *Am. Journ. Med. Sci.*, April 1848, p. 549.

above should also be attended to. If there should be any inflammation of the womb, or ulceration about its neck, with leucorrhœa, these should receive appropriate attention. For the treatment of these conditions, see the preceding chapter.

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## CHAPTER XVI.

### ADDITIONAL ARTICLES FOR THE CURE OF INTERMITTENT FEVER.

As quinine, even in very small quantities, disagrees with some persons, if taken into the stomach, it may be used *endermically*, after removing the cuticle by a blister, by mixing it with a thin paste, made of flour or starch; for, if applied alone, it causes severe pain. When used in this way, it is said not to produce roaring in the head, buzzing in the ears; or, in other words, it is said not to produce *quininism*. For young children, it may be rubbed up with soft ointment or lard, and rubbed in the armpits and groins.

In those cases in which quinine disagrees, it may be necessary to resort to other articles, some of which are considered, by some practitioners, as superior, more effectual, and preferable to the quinine, without being followed by unpleasant effects. We will notice the following:—

Dr. H. V. Wooton, of Lowndesboro', Ala., speaks very highly of the *ferrocyanate of quinia*, in doses of from two to five grains. He says he has used it in about fifty cases, and has found it, *when pure*, act uniformly without those unpleasant effects which arise from the use of the sulphate of quinine, whilst it is just as certain, and more

powerful, as an antiperiodic remedy. It lessens the frequency of the pulse, gives tone and regularity to its action, allays nervous irritation, and acts as a sedative and diaphoretic.

Dr. Wooten observes : "In ordinary cases of intermittent fever, I cannot see that its effects are superior to those of the sulphate (except that it gives no uneasiness); and as it costs about double the price, I continue to use the sulphate in most cases of that disease. But in cases in which there is febrile excitement, or inflammation, where the use of quinia is indicated, I use the ferrocyanate altogether, as I find it more certain and decided in its good effects than the sulphate, and not liable to produce any of the disagreeable disturbances of that salt. And I may add, that I use it with full confidence, in all cases where I wish to exert a sedative and alterative, or regulating power upon the nervous system." This article has been but little used as yet. Some others speak favorably of its influence.

*Chinoidine*.—Dr. J. S. Unziker, of Cincinnati, Ohio, prefers this article to the sulphate of quinine. He says it is more effectual, and the fever is not so apt to return when cured by it. He considers it particularly suited in cases where the digestive organs are not much debilitated. His mode of giving it is thus :—

|                |                     |
|----------------|---------------------|
| R. Chinoidine  | twelve grains ;     |
| Ipecac.        | one grain ;         |
| Morphine acet. | quarter of a grain. |

Mix, and make into six pills, to be given in two doses, two hours previous to the chills. After the chills have been arrested, he would give a teaspoonful of the tincture (one drachm to one ounce of alcohol) from two to three times daily, in some claret wine, for several days.

*Strychnine*.—Daniel Brainard, M. D., Professor in Rush Medical College, reports 83 cases of intermittent treated with this article, from the 20th of February, 1846, to 1st of April, 1847, with the following results:—

|                                                         |    |
|---------------------------------------------------------|----|
| Cases in which it had no influence, . . . . .           | 14 |
| In which it arrested the paroxysm for a week, . . . . . | 3  |
| “ “ “ “ “ “ two weeks, . . . . .                        | 6  |
| Which were arrested permanently, . . . . .              | 60 |
|                                                         | —  |
|                                                         | 83 |

The strychnine was given in one-eighth grain doses, thrice daily, till one grain was taken. In nearly all the cases, quinine had been given, but with only temporary relief. Most of them were cases of long standing and frequent relapses.

The influence, or medicinal properties of *Peruvian bark*, are so well and generally known, as not to require particular notice. When given to arrest intermittent fever, it should be mixed with capsicum, powdered cinnamon, or some other aromatic corroborant, so as to make it acceptable to the stomach, and given in large doses, like quinine, with intervals of three or four hours. It may be given in doses of from two scruples to two drachms, so as to take three or four doses before the chill time. After arresting the chill, it may be taken as a tonic, in from ten to forty or sixty grains, three times a day. The *extract* of Peruvian bark may be used in the same manner, in doses of from ten to fifty grains. Other preparations of the cinchona are sometimes used.

The *bark of the willow* may be used in the same manner as the Peruvian bark, and in the same doses. It may be conveniently used by the people in the country,

in decoction. The willow grows in abundance along a great many streams in this country. A salt has been obtained from the willow bark, which has proved successful in many cases of intermittent fever. It is, however, inferior to sulphate of quinine. It is called *salicin*, and may be taken in doses of from two to ten, or fifteen grains, three, four, or five times a day.

*American Holly (Ilex opaca).*—A strong decoction of the leaves of the *holly*, or *bitters*, made by putting the bruised leaves into whisky or spirits of any kind, is a remedy that is too much neglected, by the country people especially, as it is so easily procured by them without cost.

*Dogwood (Cornus Florida).*—May be used in the same manner as the holly. The bark is the part mostly used. It is a good tonic.

The *swamp dogwood (Cornus cericea)*, either the bark or the leaves, may be used as the above.

The *bark of the wild cherry (prunus Virginiana)*, or the *bark of the common poplar (Liriodendron tulipifera)*, may be combined with either of the above.

This list might be made much more extensive; but we will briefly mention the following: Boneset (*eupatorium perfoliatum*), *extract* or *infusion*; common yarrow, or milfoil (*achillea millefolium*); gentian; sulphate of iron; Prussian blue, in doses of from three grains to five, or more, three or four times a day; dose for a child, one grain; sulphur; horehound (*marubium vulgare*); a decoction of the leaves (fodder) of maize, or common corn, has been used in some places; stimulants; etc. etc. etc.

## CHAPTER XVII.

## CONGESTIVE FEVER; OR, CONGESTIVE CHILLS.

SOME authors object to the term "*congestive fever*," as they regard it an improper name for the disease we are about to consider: others think it the most proper designation that could be given it. As the disease is generally known by this appellation, I will not enter into a discussion as to its propriety or impropriety, wishing rather to be practically useful than theoretical. Notwithstanding a correct and uniform nomenclature is desirable, I consider it a matter of no very great importance, if the morbid condition is correctly appreciated, and the proper treatment adopted. Other names have been applied to this disease, as "*malignant intermittent*," "*pernicious intermittent*," "*intermittent ataxic fever*," and "*cold plague*."

Unquestionably, the best definition of congestive fever, as of all other diseases, consists in a description of its several forms and modifications. In the language of Dr. Harden, "Disease, abstractly considered, is not an *entity* or *substantive* thing, possessed of distinct qualities or properties, by which it may be distinguished and arranged like the objects of natural history, but rather a mere mode or condition of the living organism, consisting in a certain change or series of changes in the solids and fluids; the external manifestations of which are the phenomena, whether vital, physical, mechanical, or chemical, presented during its continuance, or after the death of the individual subject of it. The difficulty, under which the nosologist labors, therefore, may be

appreciated by reflecting that the classification of diseases is but a classification of *modes* or *conditions* of the living system, or more properly, perhaps, the *varying phenomena* connected with those *conditions*."

In almost all cases of congestive fever, premonitory symptoms, analogous or identical to those of intermittent fever precede the attack; although, in rare cases, the attack is sudden, and the shock as powerful and overwhelming as though the system had received a very severe concussion or wound, or was being overpowered with some violent poison. Sometimes, though very rarely, an individual may be walking about apparently well, and fall down suddenly, as from a fit of apoplexy. This occurs in hot, relaxing climates, in which intermittent, congestive, and remittent fevers are endemic, as in Bengal, Batavia, India, Italy, the more southern portions of our own country, and elsewhere. Dr. Bell says when he was at Whampoa, below Canton, he saw a sailor fall down on the deck, within a few feet of him, senseless and motionless, as if apoplectic. He recovered. On board of another vessel, he "was requested to visit incidentally a man, the steward, supposed to be under the influence of poison; he was in a state of insensibility, comatose, with occasional slight convulsions, and unable to swallow. He had been in this state since the preceding evening. It was then ten o'clock in the morning. External stimulants, and an enema of turpentine, had no effect. He died before noon." Dr. R. S. Holmes, Surgeon in the United States Army, in Florida, saw two cases, in which the attack was sudden and powerful, and which terminated fatally in less than twenty-four hours. In these sudden attacks, the individual may either be very much prostrated, dull, stupid, and disinclined to move, or he may be restless, rolling to and fro in the bed, perhaps jumping up and walking about over the house, in

some cases becoming giddy ; then staggers, and probably falls on the floor. Such cases are apt to terminate fatally, unless prompt relief is afforded. Occasional attacks of intermittent fever, especially after the system has become much debilitated, now and then suddenly assumes a very severe form of congestive chill, and the patient may die in a few hours.

Fortunately, the species of cases noticed above are of very rare occurrence, and it is said that after death there may be no lesion of any vital organ to account for this result. In one of those violent, restless cases reported by Dr. R. S. Holmes, and which terminated fatally in less than twenty-four hours from the time of attack, the patient being a stout, vigorous, dragoon soldier, the post-mortem appearances revealed the following: The congestion was in the thoracic viscera. "The viscera of the abdomen were in apparently a sound and healthy condition; the contents of the cranium were in a healthy state; the skin around the whole circumference of the chest was discolored by extravasated blood; the vessels of the heart were deeply engorged with blood; the auricles and right ventricle were filled; and the lungs bled as if sponge had been cut that was soaked in blood; the whole blood of the body seemed to have found a common reservoir in the thorax."

In nearly all cases of congestive fever, the attack is precisely like that of intermittent fever, with this difference; in the former it is more intense: indeed, congestive fever is only a more severe form of intermittent fever; the nervous system being more profoundly implicated, the determination to, or congestion of the lungs, heart, spleen, liver, etc., is so great that the system is unable, or barely able, to react without assistance. There will be more or less languor and debility, oppression and restlessness, most commonly chilliness, shivering, and

shaking; the feet and hands, arms and legs, nose, ears, and face, and the surface, become cold and benumbed; with exceptions as to the surface surrounding the thorax, which in some cases is of the natural temperature, or of a morbid heat, which in some instances may also be the case with the head. The cheeks are usually blanched and more or less purplish, the lips pale or bluish, the features contracted and haggard, eyes perhaps suffused, with a wild or vacant stare; skin pale, with more or less mixture of purple, purplish and motley, with ecchymoses sometimes in dependent parts, and shrivelled. The sensibility of the benumbed extremities is impaired, and the general surface so in a less degree; in some cases the patient desires his benumbed extremities rubbed, in order "to keep up the circulation in them." The mouth is usually cool and clammy, and the tongue more or less pointed, pale, or of a leaden hue. Impressions made on the skin by mechanical means, as by the finger, remain for some seconds after the pressure is removed. In most cases, the patient complains of being cold, though in others no coldness is complained of; this latter is commonly the case in the *algide* form, in which the surface of the patient feels of an icy coldness to another person. Most patients complain of great internal heat, are thirsty, desire cold drinks, and their room freely ventilated. Some desire to have their breast and face fanned, and perhaps sprinkled or sponged with cold water. In some cases, there is a cold perspiration about the forehead and temples, which, in some of these, extends over the greater portion of the body. In other cases, where there is great restlessness, a copious sweat occasionally makes its appearance, and suddenly or soon disappears. The *pulse* at the wrist is feeble, very compressible, yielding under very gentle pressure, generally increased in frequency (in the worst cases, Dr. Holmes has not seen it exceed

85 or 90; Dr. Lavender has seen it as high as 120 and 150), more or less irregular, and in some cases intermitting. *Respiration* is increased in frequency, is irregular, with an occasional deep inspiration, or sigh. In some very severe cases, sometimes convulsions, singultus, or hic-cough, a feeling of suffocation, heaving of the chest and laborious breathing occur. In some cases, especially in the *algide* form, the patient may not complain of any pain at all; or there may be an aching, dull pain in the back, head, and limbs; griping pains in the stomach and intestines, cramps in the extremities, etc. In many cases, there is nausea, irritability of the stomach and vomiting, in which it is often a very difficult matter for the stomach to retain anything; even cold water, which the patient drinks with avidity, is frequently soon thrown up.

Some cases of congestive fever are attended with *coma* and *costiveness*; others with *copious watery evacuations* from the *bowels*, and great prostration. I will condense the notes of a couple of cases recorded in my case-book, to illustrate each of these.

*Comatose, somnolent, or lethargic variety of congestive fever, attended with obstinate costiveness.*—Mr. —, aged about fifty-five, farmer, was taken with this variety of congestive fever in the early part of November 1844. Before I saw him, he had had a paroxysm which lasted ten or twelve hours, during which time he was somnolent and insensible to all surrounding objects, nor could he be aroused. When I first saw him, this paroxysm had passed off, and he conversed some, intelligibly, though it was manifest that his mental faculties were dull. I gave him a dose of medicine composed of quinine, calomel, and rhubarb; but it was but a short time after this till another congestive chill came on, with concomitant somnolency, coma, or lethargy, from which he could not be

aroused; occasional stertorous breathing; eyes nearly closed; deglutition most of the time could not be performed; subsultus tendinum; cold extremities, &c. A small blister having been made on the nape of the neck, quinine and sulphate of morphine were mixed with a little thin paste made of flour and water, and applied to it. Stimulating injections were repeatedly used. This paroxysm lasted about as long as the previous one; after it passed off, quinine and other adjuvantia were promptly and repeatedly given, which averted another paroxysm, and the patient recovered.

*Case of congestive chill, with copious watery discharges from the bowels.*—Mrs. —, aged about twenty years, mother of two children, youngest about ten months old, was taken with a chill and diarrhœa on the 24th (evening) of March 1846. On the morning of the 25th she was able to ride a few miles to visit some relatives, and while on her visit, in the evening, was taken with a congestive chill, attended with copious and very frequent watery discharges from the bowels; having walked out to stool, in returning, ere she reached the door she fainted, and fell prostrate in the yard. I saw her about sunset, faint, very weak, and prostrated; almost incessantly getting up to stool; great anxiety and oppression, pulse very weak, increased in frequency, extremities cold, &c. Gave her quinine, laudanum, and paregoric; repeating the quinine every four hours, and the laudanum and paregoric as occasion required.

26th.—The quinine affected her head in the course of the night. Ordered it to be given in smaller doses, with longer intervals; and the laudanum and paregoric to be given as occasion required. Recovery without another chill; the bowel affection also arrested and cured. I might have added, that this case was also attended with

gripping pains in the bowels, aching in the loins, cramps in the lower limbs, &c. This form, or type, appears to be analogous, or identical, to that described by Hippocrates, under the title of ASODES. Dr. T. D. Bell (*see* page 15) speaks of this form of congestive fever, which prevailed in the low, flat, marshy country, near the junction of the Black Warrior and Tombigbee rivers, in Alabama, in the summer of 1829. Dr. J. B. Wilkinson, of Louisiana, in a communication to the *New Orleans Medical Journal*, in the July No., 1845, speaks of such cases occurring in his practice. (*See* page 18.)

In many cases, attended with very great restlessness and oppression, the patient almost incessantly rolling to and fro in bed; the bowels are obstinately costive, seeming to be almost insensible to the influence of cathartics.

In the *algide* variety, the skin is as cold as marble, wet with the morning dew; the action of the heart is feeble, pulse scarcely perceptible; there may be no thirst; vomiting easily excited; mouth and tongue pale, cold, moist, and even the breath is cold; mental faculties composed; the patient complains of no pain; if dysentery is conjoined, the eyes sink further in the sockets, look hollow, glassy, and are surrounded by a purplish hue.

Some authors uselessly make many varieties of congestive fever, which depend on the predominant symptoms or complications; as the *delirious*; *gastralgie*; *choleric*; *syncopal*; *carditic*; *hæmoptoic*; *pleuritic*; *pneumonic*; &c. But there is one form of the disease, of which I have seen no account, by any author. I have seen but one or two strongly marked cases of it myself, but have heard of others. My esteemed friend, Dr. Murphy, of Decatur, Alabama, first attracted my attention particularly to this form of congestive fever. He informed me, that he and his copartner, Dr. Dancy, saw eight or ten cases of it in the summer and autumn of

1848, all the subjects being adult males. This variety is characterized by a *copious perspiration*, which is cooler than natural; *embonpoint natural*, *features*, *body*, and *limbs*, are as *full* as in *health*; no shriveling of the skin, the extremities cold, and the general surface cool; great restlessness and oppression, rolling or turning from side to side; usually some pain in the head; in many cases intense gastric distress, and perhaps vomiting of a quantity of ropy, glairy mucus, in some cases mixed with bile, or streaked with blood, or both. Dr. Murphy says, the pulse is usually about fifty, though he has observed it as low as forty-five.\* Prostration is considerable, and commonly the patient imagines death almost inevitable, requiring the encouragement of the attendants, and the assurance of an almost certain recovery. Cases of this kind may, or may not be attended with dysentery. As, so far as I am aware, they are not described by authors, an abbreviation of the notes of a case, recorded in my case-book, may further profitably instruct the reader.

Sept. 22d, 1848.—Mrs. —, aged 39, of full habit and lax fibre; *enceinte*, and, according to her statement, about seven weeks till the full term of utero-gestation; was usually confined at about eight and a half months; was the mother of eight or ten children. In the two last pregnancies previous to this, abortion took place about the seventh month. When called to-day, I learned that she had had quotidian intermittent, for several days, the chill coming on about four o'clock every evening. I found her with the chill on, attended with copious and frequent watery discharges from the bowels, griping pains in the lower part of the abdomen, great gastric distress,

\* Since writing the above, I have seen a case, white male, aged forty-eight, in which the pulse varied from forty-eight to fifty-eight.

puking of a glairy, ropy mucus, which formed a considerable bulk, as it adhered together; and, after the vomiting continued some time, the mucus was mixed with yellowish bile, and tinged with blood. Administered laudanum and quinine, which soon gave relief.

*Sept. 23d.*—Griping pains in lower part of abdomen; abortion suspected, or anticipated. Ordered injection of laudanum in a little starch gruel, which gave relief. Also ordered three or four grain doses of quinine, four times a day, and laudanum, if necessary.

*Sept. 25th.*—Night visit; found her with *congestive chill*; extremities cold; the general surface cool, and covered with a copious, slightly clammy perspiration, which was not very cold, but cooler than natural; pulse scarcely perceptible, and about 55 beats in a minute; great gastric distress; vomiting and purging; eyes wild-looking, and expressive of distress; great oppression; occasionally a deep sigh, and a disposition to change her position in bed frequently. She seemed to think that death was almost inevitable; prostration considerable.

**TREATMENT.**—Gave fifty drops of laudanum, with ten grains of quinine, and shortly afterwards, one teaspoonful of sulphuric ether, which gave relief, and brought about reaction. Left two doses of quinine for her to take during the night, and ordered three or four grain doses of quinine four times a day, and laudanum, &c., as occasion required.

*Sept. 27th.*—Early this morning, was informed by her husband that a small quantity of blood had come from the genital organs, attended with pain in the loins, heaviness, and bearing-down sensations in the region of the womb. Abortion feared. Ordered sugar of lead and laudanum internally, and opiate injections. P. M.—Soon after supper was called to deliver her—female child

—dead—its face of a leaden hue, as though it had been dead some time; the mother said she felt it move early in the morning. Tonic treatment was adopted, and she soon recovered.

Dr. S. R. Beatty, of Clear Spring, Washington Co., Maryland, gives an account of what he calls "*congestive bilious fever*," which occurred in his practice on the Potomac river for four or five years previous to 1828, or 1829, inclusive. Notwithstanding he has given it a wrong name, he has pretty well described the symptoms of congestive fever. I will quote some of his remarks, from the circumstance that, so far as the writer is aware, he is one of the first American writers who well describes this disease separately—we can scarcely say *separately*, as he considers it only a modification of bilious fever; yet it does not matter about the name, so the symptoms are well portrayed. I also make the extract from the fact that he recognizes its relation to the *typhoid pneumonia* of this country (to which a chapter will be devoted in the latter part of this work), and which it appears a large number of the medical world, even at the present day, do not. But to the extract.

"The congestive bilious fever, from the coldness of the surface which attends it, and its fatality, has received the vulgar appellation of cold plague; and in the winter and spring, being accompanied with pneumonic symptoms, is called typhoid pneumonia; \* \* \* \* \* the malaria, and the exciting causes producing the congestive form, are of a grade so overwhelming and deadly, as to prostrate at once the action of the heart and other constitutional powers, to such a degree that reaction either does not take place at all, or, if it does, it is only partial or transient. If not early arrested by proper treatment it soon runs on to the stage of collapse, without an intervening one of excitement; \* \* \* the surface is as cold

as marble, particularly on the extremities, and often bedewed with a clammy sweat; the patient, at the same time, complaining of great heat internally; in some cases, so intolerable as to cause him to cry out that he feels as if a furnace was burning within him, and constantly to be calling for cold water to relieve the intense thirst and internal heat; while, at the same time, the pulse is frequent, weak, struggling, and unresisting. The attack often comes on suddenly; at other times more gradually, the patient first complaining of lassitude, as in other fevers; the extremities then become cold; the stomach is so irritable as to reject everything it receives; if a glass of cold water, so grateful to the patient, be taken, it is immediately thrown up; if medicine, the same thing occurs. There is great anxiety at the præcordia; pain in the head, and anxious and difficult respiration. The tongue is often thickly coated, and the bowels torpid; all the secretions being either totally arrested, diminished in quantity, or of a vitiated quality." Dr. Beatty mentions, that some cases occurred in the country situations on the Potomac, in the fall of 1823, with yellowness of the skin and white of the eyes, and such violent symptoms "as would have ranked them amongst the worst cases of yellow fever, in those cities where the disease mostly prevails." In further describing congestive fever, Dr. Beatty remarks, "In all the cases of congestion which I have met with, a symptom occurred which I have never seen noticed by any author—a numbness and deadly feeling, commencing in the extremity of the fingers and toes, and proceeding gradually up the arms and legs; \* \* \* the patients pointed out this symptom, and were never satisfied unless some person was constantly rubbing each limb, as they themselves said, 'to keep the blood circulating.'"

"Sometimes partial reaction comes on, some part of

the body or the head becoming preternaturally hot. If it be the latter, the carotid arteries pulsate strongly. A general excitement may emerge, particularly after the action of proper remedies, and the disease then runs its course under the simple or inflammatory form, and must be treated as such.”\*

A very large majority of the cases of congestive chills are preceded, for a few days or longer, by common chills and fever, or ague and fever; to which latter, either on account of neglect or maltreatment, in highly malarious districts, congestive fever ensues. Some years ago, when calomel was used so freely in the southern portion of the United States, congestive fever was of very frequent occurrence in many places; and is unquestionably much more frequent at present in those regions of the southern country where calomel is more freely used, and the old antiphlogistic treatment adopted. In many places in the South, congestive fever has almost entirely disappeared, in consequence of the improved mode of practice; and from the fact that the people in the country have learned, not only the proper means to cure common chills and fever, but also the importance of arresting these before they are merged into the congestive form. About Courtland, Alabama, is known to be a highly malarious region of country; yet, in consequence of the applicability of the above remarks, Dr. Sykes, of that place, not long since informed me, that congestive fever was now of rare occurrence there. But rather than be too tedious, I will let these few remarks suffice.

**TERMINATIONS.**—Very few cases of congestive fever terminate in death, if the proper treatment is resorted to

\* See second volume Transylvania Journ. of Med. for 1829.

in time. Though it is a dangerous malady, if left to itself, it usually readily yields to early and proper treatment. I have seen a severe case treated promptly and efficiently, and the patient get up and walk out and attend to some light business on the same day. A remarkable case of this kind came under my observation in the fall of 1848; and as the notice of particular cases is more impressive and instructive than general remarks, I will, for the benefit of the reader, take some notes of this one, recorded in my case-book, and enter them here. This case may be classed with that variety which we have already noticed, and which we considered as analogous or identical to that described by the father of medicine, under the title of *Asodes*.\* The symptoms of these cases are very analogous, if not identical, to those of Asiatic cholera. But to the case.

Mr. H., aged about twenty-two, was taken early in the morning, on the 10th of November 1848, with diarrhœa, which, in two or three hours, was followed or accompanied by a *congestive chill*. The general surface was of a pale leaden, or bluish hue; extremities of an icy coldness, and the general surface cool and dry; features contracted and anxious; shivering, and complained of being cold—requested a hot rock placed to his feet; great anxiety and restlessness; would, occasionally, lie in one position for a few minutes, with now and then a disposition to doze; pain in the head and back, with pain and cramp in the stomach and bowels severe, and cramp in the legs; puked freely and repeatedly—water, mucus, and blood thrown up, which, after a time, was tinged with yellowish bile; purging more copious and watery. Respiration increased in frequency, irregular, louder than natural, labored, with an occasional deep sigh. Pulse feeble, somewhat irregu-

\* A Greek word, said to mean “anxiety,” “disgust,” etc.

lar, about ninety per minute; very thirsty, desiring cold water every few minutes. Treatment commenced at about half-past nine o'clock, the chill having been on near two hours. I gave him about eight grains of quinine and forty-five drops of laudanum, which were thrown up in about ten minutes, and then the dose was repeated; which, after retching, or efforts at vomiting, relieved the severe pain of the stomach, and otherwise gave relief. After I discovered that reaction was gradually taking place, I left; having given directions to repeat the quinine and laudanum again, if that I had given should be thrown up. Also ordered quinine and paregoric to be taken at night, and the ensuing morning; and quinine in smaller doses three times a day for several days, and opiates, as occasion required, to control the bowel affection, &c.

*Nov. 11th.* Saw my patient walking about town to-day. He informed me he was up walking about, about an hour after I left him yesterday, which would make it about noon. He said he had very little fever.

Notwithstanding the severity and danger of congestive fever, if left to itself, the treatment of this case shows how promptly and certainly it yields to early and proper treatment. And the analogy between this form of congestive fever and Asiatic cholera, inclines me to believe that the same mode of treatment adapted to the former, if early resorted to, would be equally successful in the latter.

If a case of congestive fever proceeds on to a fatal termination, in the language of Charles E. Lavender, M. D., of Selma, Alabama, "he lies still, it may be for a minute, without breathing, then gasps for breath, makes short and hurried respiration, cries that he shall die for want of breath; rises, advances hurriedly to the window, staggers, throws himself on another bed, or falls on the floor; the pulse has ceased to flutter at the wrist; a moment's

unusual anguish, a gasp or two for breath, the heart ceases to beat, and death closes the scene in six or eight hours from the access, the sufferer retaining his senses to the last. At other times, death approaches under cover of a deep, comatose sleep, of several hours' duration. Sometimes, though rarely, the paroxysm closes in convulsions.

“The fatal moment is sometimes delayed a few hours by the free use of diffusible stimulants, in which case the patient usually dies comatose. At other times, partial reaction takes place; the skin becomes warm, or even hot; extremities remaining cold; pulse may again be counted; from 150, it falls to 120; it may be the patient sleeps for some hours, or dozes on in painful and interrupted slumbers, to be followed the next twenty-four hours by another paroxysm, terminating in fatal collapse.” The coldness of the extremities becomes more and more permanent, and gradually encroaches upon the body; the feet, legs, hands, and forearms, first being of a deathlike coldness; then the thighs, arms, head, face, and so on to the body, till life becomes extinct. In some cases, for some time prior to dissolution, the surface is covered with a copious, cold, clammy perspiration.

If the paroxysm is less severe, it may be followed by complete reaction, and rapid convalescence may ensue; or, if the reaction is less complete, a severer paroxysm may come on in the next twenty-four hours, and terminate in death; or, it may be less intense, followed by more perfect reaction, and the patient may soon be restored to health; or it may run into the remittent or intermittent form of fever. If it proceeds on to the third chill or paroxysm, it is said generally to terminate fatally; though this is not always the case; yet, the third chill is very much dreaded by practitioners, and the people.

In their recurrence, the paroxysms, I believe, usually obey the quotidian type—sometimes the tertian. Dr. R. S. Holmes remarks, that the congestion in congestive fever, is not “brought on purely by the time of the paroxysm ; any quick, exciting cause, be it ever so trivial, the entrance of a stranger, the firing of a gun, some one bursting suddenly into the room, even the visit of the physician, will throw the blood from the extremities, or more properly, perhaps, prevent its due propulsion into them ; the lips will become livid, the tip of the nose and ears cold, the feet and legs cold, the cheeks blanched ; and yet the patient, strange to say, will be unconscious, generally, that a change has come over him ; all this, too, independent of the regular periodic time, when the true paroxysm comes on.”

Dr. Lavender says : “ Of all the local congestions that attend upon this form of disease, that of the brain is most alarming, least manageable, and most fatal. It is marked by deep coma, low, muttering delirium, rolling the head on the pillow, a drawing of the head backwards, dilatation of pupils, optic illusions ; and, if partial reaction takes place, raging delirium may come on.” Engorgements, and consequent enlargements of the spleen, etc. etc., are well known to be of common occurrence in congestive fever, but these will be noticed when we come to treat of its pathology, and refer to *post-mortem* examinations.

In the *intervals*, or between the paroxysms, Dr. Holmes observes : “ He will be torpid, morose ; his mind dull, slow in gathering up his thoughts, his pulse laboring, and full and slow, his bowels sluggish, or, if irritation has set in upon them, frequently purged ; the secretions from his liver, kidneys, and skin, improperly carried on, or almost checked ; if the congestion is on the brain, he will complain of dull pain in the head, if on the thorax,

his breathing will be hastened, if on the abdomen, inflammation of the intestines will probably soon set in, if the disease is not speedily checked."

As to the *causes* of congestive fever, the reader is referred to the first part of this volume, and also to a few remarks made on page 191.

**PATHOLOGY.**—It appears that the primary morbid impression is perfectly identical with that of intermittent fever, with the difference that, in congestive fever, it is much more intense. As remarked when treating of the former, for aught we know, previous to the chill, there may be a link in the chain of morbid action, consisting in a modified, altered, or, in other words, morbid condition of the blood; yet, apparently, the first great or primary morbid impression is made on the nervous system. The precise nature of this impression is not known, though it would appear to be a sedative or debilitating one, which prevents the great nervous centres from secreting or generating a sufficiency of nervous fluid, or that which gives nervous power, or power to the nervous system; hence, the heart, lungs, etc., not receiving that amount of nervous influence which will enable them to carry on or perform their functions normally; or, more properly, on account of nervous debility, their functions are impaired, and they become congested, engorged with the circulating fluid, the blood. So far as we are capable of judging from symptoms, it appears that the morbid impressions made on the three great nervous centres do not always bear the same relation to each other in different cases; as, for instance, the undisturbed condition of the intellectual faculties in the *algide* form, and even a repose which is said to be agreeable to the patient, which may be regarded as an evidence that the brain is less affected than the spinal and ganglionic systems of

nerves, though the absence of pain in the former does not necessarily imply that it is not affected at all; yet, while the brain maintains its functions, this is an evidence that it is but slightly, if at all, morbidly affected: however, even the feeling of repose may be an evidence of morbid impression. Other cases are attended with coma or lethargy, or raging delirium, which unmistakably inform us of the serious implication of the brain. In others, again, we observe that the spleen, stomach, and bowels, heart, etc., are most prominently affected, an evidence of the greater implication of the ganglionic or organic system of nerves; but as all parts of the nervous system are so intimately connected with each other, and so mutually dependent on one another, when one is much affected, the others will participate in a greater or less degree. *Post-mortem* examinations also go to justify such conclusions as these; pathological lesions in some cases being most prominent in the head, in others in the thorax, and in others in the abdomen. In the case we have heretofore noticed (examined by Dr. R. S. Holmes, when he was army surgeon in Florida), the viscera of the abdomen and contents of the cranium were in an apparently healthy condition, the heart and lungs being deeply engorged with blood. The pathological lesions observed by M. Bailly, who visited Rome for the purpose of endeavoring to ascertain the nature and seat of this disease, go also to prove that they are not uniform. In 36 necroscopies, as given by Bell, the records are as follows: arachnitis, 25; gastro-enteritis, 19; splenitis, 18; rupture of the spleen, 3; diffuent spleen, 2; cephalitis, 13; gastritis, 7; enteritis, 7; alterations of the liver, 5—of which one was by inflammation, two by congestion, and two by putrilaginous softening; pneumonitis, 3; pericarditis, 3; peritonitis, 2; parotiditis, 1; œsophagitis, 1; cystitis (biliary), 1.

Some writers consider the phenomena of congestive fever to be induced by irritation of the cerebro-spinal axis; others, that the ganglionic system suffers most severely; so far, then, as opinions are worth anything, they go to prove the remarks already made.

Unfortunately, heretofore, the minds of physicians have been too much directed to the circulation of the blood, and pathologists have been too exclusively hunting after some local or organic disease, to the neglect of the nervous system, and its functions. The following remarks of Dr. S. R. Beatty, will serve pretty well to give an idea of the disturbances of the circulation; but, unfortunately, his mind is too exclusively directed to this, an effect, without looking to the cause of it, the morbid condition of the nervous system. He says, the cause or causes "are so deadly and overwhelming, as almost completely to prostrate the action of the heart; a more extensive congestion takes place about its right side, than in the other two varieties [simple and inflammatory fevers], and its muscular parietes are so much distended by this unnatural engorgement as to be almost paralyzed; for the same reason that the contractile muscles of the hand or mouth, or any other part, when they are stretched to their utmost extent, have not near so powerful a contracting force, as when they are only moderately extended.

"The heart, therefore, in this fever, has not the power of producing a general excitement, as in the two former; but efforts towards it are sometimes made, the temperature of the chest or abdomen being raised considerably above the natural standard; while the other part of the body remains of a deathlike coldness, bedewed with a clammy sweat, and the pulse at the wrist scarcely perceptible, the powers of the heart being still too weak to extend its influence so far from the centre of circulation. This attempt at reaction generally vanishes in a short

time, the heart being too much oppressed by the internal engorgement to accomplish it, and the disease passes on to the stage of collapse, and terminates in violent cases as soon as the third day; in others, it lasts nine or ten days, or even longer. The congestion, commencing in the right side of the heart, extends up the descending cava into the sinuses and veins of the brain, producing the sense of fullness of that organ, coma, delirium, &c. In the thorax, the blood returning from the vena azygos, and through it from the bronchial veins, being obstructed by the accumulation in the descending cava, and the congestion of the right ventricle extending into the pulmonary arteries, oppress the lungs, and thereby cause that anxious respiration and sense of suffocation which invariably attend this disease.

“It is now plain, that in the congestive state, too large a proportion of blood is accumulated in the veins and right side of the heart, and, of consequence, too small a quantity remains in the left side and arteries. This state explains the cause of the extreme feebleness of pulse and general coldness of the surface, the characteristic symptoms of congestion.”

This country has for many years past, and is still, but to a less extent, cursed with an ingenious, false, delusive, and fatal theory, in referring all our fevers to disease of the liver, and, consequently—as the advocates of this theory contend—demand the liberal use of calomel!! I am sorry to see that there are, even yet, not only men who stand high in the medical profession, but even professors and teachers in medical schools, under the influence of this delusion; and it is but reasonable to suppose, that hundreds and thousands of medical students will thus be led astray, till they learn, from actual practice at the bedside, this error of their teachers. There are not a few practitioners, who have learned, from expe-

rience and common sense, the nature and proper treatment of our autumnal fevers; and who, though they admire the learning and talents of their former teachers, lament the errors into which they have been led, and in which some of them still remain. But after this short digression, I will quote the following very appropriate remarks, by Charles E. Lavender, M. D., of Selma, Alabama:—

“It sometimes happens that the patient dies in the first paroxysm, without any *febris* at all. At other times, there is a chill, or cold stage, followed by a state of comparative repose, but little or no reaction, to be succeeded by another and fatal cold stage. Venous congestion also doubtless exists in other forms of fever. This congestion, however, so far from being the seat, or proximate cause of the disease in question, is but an effect of the action of the poison upon the brain and nervous centres. A similar pathological condition may be superinduced by concussion, or other injury done to the brain. It is but a symptom of congestive fever. And could we, with equal clearness, see the workings of the cerebro-spinal and nervous systems, the motions and uses of their fluids, the degree of their intensity, the momentum with which they circulate, and the obstructions which they encounter, we would then advance another, and more satisfactory step, in the investigation of this, as well as other forms of disease. These more obscure, yet vastly more important, vital and pathological phenomena have, unfortunately, been overlooked by many able pathologists, in their researches on the liver and venous congestion. Too much importance has doubtless been attached to the circulation of the blood, to the neglect of the nervous functions. The symptom has been elaborately investigated, while the cause has received comparatively little attention.

“A case that has assumed, and for some paroxysms

maintained, the character of remittent or intermittent, may suddenly put on a congestive type. An attack, which at first assumed a congestive form, may, after a successful effort at reaction, wear the face of remittent or intermittent, of a mild character.

“Many cases, in their onset and progress, wear the livery of all three of these types; and might, at different stages, be set down under each of these heads. And, sometimes, it would be no easy matter to decide upon the class to which a case properly belongs.

“There is scarcely an important organ which may not, during the progress of the disease, become the seat of local congestion. The spleen may become engorged to such an extent, in a few hours, as to be found double its natural size. The same, to a less extent, may be said of the liver. Congestion of the lungs is an alarming occurrence, which, doubtless, always exists, to a greater or less extent, in this form of fever. The great oppression, laborious breathing, heaving of the chest, and sense of suffocation and sinking down, denote such a state \* \* \*

“Unfortunately for young practitioners at the South, their knowledge of this formidable disease is chiefly drawn from the well-studied lectures of professors who never met with it in practice, or from the ponderous volumes of writers on general therapeutics, to whom congestive fever is a matter of history. The most unwelcome, and perhaps the most useful lesson that such a practitioner ever learns, is taught him by the first well-marked cases of this type with which he meets.”

It is said, that blood drawn from a patient who has congestive fever is much darker and thicker than natural. Charles Frick, M. D., of Baltimore, gives us the result of the chemical analyses of the blood of two cases, one of which he terms the remittent congestive form

(see No. 1); and the other, the intermittent congestive form (see No. 7). (See pages 65 and 66, and table; or, the *American Journal of the Medical Sciences*, January No., 1848; pp. 29, 30.)

The writer's observations corroborate the following remarks of Dr. R. S. Holmes: "One circumstance has often attracted my attention, in cases of diseases from miasmatic origin in this country; that is, the abnormal actions of the heart; its beats, if the patient has been weakened by disease, are so tumultuous and diversified, but afford withal so little sign of organic lesion, that, if not acquainted with the former condition, your prognosis will be most unfavorable. I have seen, however, but few permanently bad results from this cause. If you strengthen the patient by tonics, and remove him to a more healthy spot, even in Florida, he will recover. I look upon this as a deranged, miasmatic, nervous action in that organ, for which change of place and tonics afford the best cure." According to my experience, these nervous palpitations or abnormal actions of the heart are most apt to be troublesome at night, just after the individual has gone to bed. Disturbances in the actions of the heart may also be brought about by violent and sudden exertions.

The DURATION of congestive fever is very various. In some cases, if the proper treatment be early resorted to, the paroxysm may last only a few hours, and the patient may get up and walk about, feeling almost well, though somewhat enfeebled, and dull. In more severe cases, it may last several days; and in others, especially those which are of the remittent form, and in which the sensibility of the nervous system is greatly impaired or benumbed; characterized by languor, dull-

ness, little or no restlessness, or pain, it may last ten or fifteen days, or even longer. Nearly all cases which last over three days, are of the *remittent congestive form*. If congestive fever does not result fatally in two or three days from its inception, it is apt to terminate in convalescence, intermittent, or remittent fever.

PROGNOSIS.—Though congestive fever is a malignant and fatal form of disease, when neglected, or improperly treated, yet, under timely and proper treatment, the prognosis is nearly always favorable. Thus far, I have been successful in every case that has come under my professional care. In conversations with practitioners, I learn, as the result of their experience, that death is extremely rare, as the result of congestive fever, except in those cases which have been neglected too long, or have been improperly treated. Dr. R. S. Holmes remarks, that he has “known, in Chester county, Pennsylvania, in a small district, one-fourth the number of patients die, who were seized with a pure miasmatic, congestive fever, differing from that of Florida only in its lighter grade; yet the disease, as treated by army surgeons in Florida, with quinine, was one of the least mortal, probably not more than one in forty cases proving fatal.” Then, after stating that he has not seen a patient die, who survived after twenty-four hours from the time of attack, remarks, that “The fatal cases are those, in which the quinine has not been given in a proper quantity, or where it has not been thrown into the constitution for a sufficient length of time to reach the disease.”

These remarks, will, perhaps, not only be rather surprising, but probably scarcely credited, by many who have heretofore witnessed the great mortality of this disease, under improper treatment; indeed, in many places, the term “congestive fever” has had an appalling signi-

fication, almost synonymous with death. Coupled, or followed by some sensible remarks, I was very much surprised to see so frightful an estimate of the mortality of congestive fever, in a southern Medical Journal, which fell into my hands some time last year (1848), made by Stephen N. Harris, M. D., of Savannah, Georgia; and which tempted me to imagine that the physicians in that region of country have not yet learned how to treat it properly; that they are, perhaps, still under the erroneous teachings of Dr. Dickson, with regard to the too liberal and improper use of calomel. The following is the substance of his remarks. As they are not before me, I will not vouch that they are verbatim. "The *prognosis*, as might be anticipated, is exceedingly unfavorable in most cases, and uncertain in all. I am unable to give an exact proportion of recoveries, but the probable ratio is two in five (!!) Much depends upon the youth and previous vigor of the subject, as well as upon the concentrativeness of the congestion; but I am inclined to think that much more depends upon the complexion of the diseases prevalent at the time; if these have a tendency to typhus or ataxia, there is probably a diminution of chances for inducing reaction, and the disease proceeds to a fatal termination; but if, on the other hand, the character of the season disposes to activity of the vital manifestations, the chances of recovery are increased. There is another influence, and a most important one, affecting the complexion of all diseases, in a greater or less degree, but especially the class under consideration; it is the influence of locality."

In those cases which observe the intermittent type, the chill may only last a few hours, and, if properly treated, rapid convalescence is most likely to ensue; or, if the treatment should not be entirely efficient, a second chill may come on in a day or two, which will probably be

much lighter than the previous one, and the patient soon recover, under a tonic treatment; but if the proper treatment be neglected, if he escape death in the first paroxysm, a second or a third may be more severe, under which the individual may succumb. Those cases in which the paroxysm lasts for a long time—from eight to twelve or twenty-four hours, or longer, or those which partake of the remittent form, are to be dreaded, and imperatively demand prompt and assiduous attention. Cases of this kind are more likely than others to be protracted, or run into the remittent form of fever.

E. F. Bouchelle, M.D., of Columbus, Mississippi, says: so long as he “pursued the plan of *correcting the secretions*, and stimulating by *brandy, camphor, camphor and quinine, ammonia, pepper, &c. &c.*, I lost patients. But when, on the other hand, after much reflection, I had changed my pathology of the disease, and adopted the *cold water* and *anodyne* practice,\* my labors were crowned with success, and have been ever since. In truth, the most violent forms of congestive fever will as certainly yield to the anodyne treatment, as will a local inflammation yield under depletion.” Dr. Bouchelle considers “that all of the leading phenomena of the disease are referable to derangement of the organic system of nerves more particularly; the excitement of congestive fever is irritable excitement, and in most cases so excessive that it soon sinks the system into collapse, unless moderated.”

TREATMENT.—The prompt relief, which we are almost always enabled to give to those who are suffering with all the agonies and distress of a congestive chill, which

\* By the “*cold water* and *anodyne* practice,” Dr. Bouchelle means the *cold dash* to the general surface, and *opiates internally*.

seem so ominous of ill, is enough to excite within us feelings of gratitude to the Author of our Being, that he has placed such potent and effectual means within our power, that he has given us minds capable of appreciating their virtues, and that we are therefore instrumental, not only in relieving the sufferings of our fellow-beings, but snatching them, as it were, from an untimely or premature grave, by neutralizing or rendering ineffectual one of the powerful instruments of death. It is pleasant to reflect, that notwithstanding the severity and danger of congestive fever, it is one of the most corrigible diseases in the whole catalogue of nosology, if it receives timely and proper attention. The treatment, though plain, and easy of comprehension, may be regarded as one of the trophies of the present day in the healing art.

The different forms or modifications of congestive fever require, as one would naturally suppose, some modifications of treatment, so as to adapt it to these respectively. The two great and principal remedies are quinine and opium; with the exhibition of sulphuric ether in some cases, and in some the *cold dash* to the general surface, &c. &c. If called to one of those violent attacks in which there are great distress and restlessness, and the vital manifestations seem to be rapidly yielding, as though the vital spark would soon be smothered out, give, immediately, from 8 to 20 grains of quinine, from 50 to 100 drops of laudanum, and one or two teaspoonfuls of sulphuric ether. First, mix the laudanum and quinine together, and give them; then, after waiting a few minutes, mix the ether in half a glass of sweetened water, stir briskly for a moment, and let the patient swallow it down quickly. If the patient is shivering, and manifests much anxiety, a few teaspoonfuls of ether poured upon a handkerchief, and held to the mouth and nose, so that he may inhale it, usually gives

relief in a very short time. These means will almost invariably give speedy relief, especially if resorted to soon after the attack. If the above articles should be puked up, on account of the irritability of the stomach, they should be repeated. If they should be thrown up a second time, quinine and laudanum, in double doses, should be mixed with an ounce or two of starch or flour gruel, and given by injection into the rectum; or quinine and morphine may be applied to a blistered surface, first mixing them with a little thin paste, or gruel, made of flour or starch; twenty or thirty grains of quinine, with one grain of sulphate of morphine, will be a sufficient amount for this purpose. The blister should be preferably made on the nape of the neck, between the shoulders, or over the region of the stomach. In order to make a blister quick, so as not to lose important time, it may be done almost immediately, by dipping a piece of cloth in concentrated acetic acid, solution of ammonia, &c., or the application of hot water. In such cases as the one above instanced, some practitioners speak very highly of the *cold dash*. If the stomach should have retained the remedies (rendering it unnecessary to give them by injection, or their application to a blistered surface), it may be necessary to repeat the laudanum and ether, though in smaller quantities, say from 30 to 50 drops of each; if the former is slow in producing any effect, in the course of half an hour, or an hour or two, according to the severity of the case, and the distress and anxiety of the patient. I commonly repeat the dose of quinine in three or four hours. This plan of treatment is almost sure soon to give relief and repose, bring about moderate reaction, and a rapid convalescence. The patient should, however, to insure recovery, and prevent relapse, take from three to five grain doses of quinine four or five times a day; and, if dysentery attend, in ad-

dition to the quinine, from 25 to 40 or 50 drops of laudanum, or one or two teaspoonfuls of paregoric, should be given once, twice, or thrice a day, or as occasion requires; to which may sometimes be added with advantage, if it prove obstinate, some astringent, as krameria, catechu, tannin, a strong decoction of oak bark, if the stomach will bear it, tincture of cinnamon, or sugar of lead, which latter may be given with the opiates, but should not be given with the quinine, or for an hour or two after a dose of quinine has been taken, as these two articles are *incompatible* with each other.

In those cases attended with great restlessness and oppression, the patient tossing to and fro in bed, the extremities and general surface of an icy coldness, with exceptions, in some cases, of the region about the chest and head, which may be of a natural or morbid heat; and more particularly, also, if the general surface is not covered with perspiration, in addition to the use of quinine and laudanum, some practitioners have great confidence in the *cold dash*, to bring about reaction and composure: indeed, I believe a few practitioners rely almost exclusively on the cold dash to bring about reaction. The patient, stripped of his clothing, is laid on a blanket on the floor, several buckets of cold water are then dashed all over him; he is then wiped dry, perhaps some hasty friction is used; he is then put in bed, and covered with two or three blankets, to assist in bringing about reaction. However useful the cold dash may be, we should not rely on it, to the exclusion of quinine and laudanum, and ether, if necessary. As before remarked, some practitioners have great confidence in the cold dash, but I may observe that there are others who do not seem to think favorably of it. It would seem from this, that we might infer that there are some cases to which it is adapted, and some to which it is not. So far as I am

aware, the cases to which it is applicable are not yet well settled. I have taken some pains to try to acquire information on this subject, and it appears that it is most adapted to such cases as the last one instanced above; and that in the following conditions it is not applicable, or does little or no good—as in those cases which come on slowly and insidiously, torpidity of the system and dullness; no restlessness, but great prostration; weak pulse, cold extremities, etc. I might refer to the experience of reputable practitioners to prove the potency of the cold dash in the treatment of congestive fever. We have already incidentally referred to the confidence Dr. Bouchelle, of Columbus, Miss., reposes in it. So far as I have been able to learn, our own countryman, Dr. Thomas Fearn, of Huntsville, Alabama, was the first to resort to the cold dash in congestive fever. Dr. Fearn was also the first who used quinine in large doses; which he did but a few years after this article was discovered by Pelletier and Caventeau, in 1820. The success attending its exhibition in what once would have been regarded as very large doses, and even yet at the North, might have reasonably induced one to fear that it would be injudiciously used by many, and thus be productive of mischief; and such has been the case. Considering, however, its potency for good, its evil effects are comparatively small. Dr. Perrine, of Mississippi, was one of the next after Dr. Fearn, to appreciate the value of quinine in larger doses than had formerly been used.

Dr. R. S. Holmes says, "It cannot be thought strange that the practice at the North of giving quinine in divided doses for bilious, remittent, and congestive fevers, should prove so unsuccessful. Though the fevers there do not require such large doses of this article as at the South, they require very different ones from those that are now given.

“The experience of physicians in the south of France, in Italy, and in the southern States of the Union, shows that a much larger dose of quinine is necessary to check a fever in those countries, than in latitudes and regions where malarious influence is not so powerful.

“On my arrival in Florida, knowing nothing of southern diseases from practice, and being stationed alone at a distant and unhealthy post, I learned the rules by experience alone, guided by which I have since successfully administered quinine. I practiced on northern precepts, annoying the patient without arresting the disease, by a continued succession of two grain pills; occasionally, at long intervals, checking the disease by these means, but much more frequently vexed for weeks by the continued sickness of the soldier.\* I rose finally to ten grains, and continued to give this quantity at once. I more frequently succeed by this practice, but not yet to my satisfaction. \* \* Finally, convinced that large doses of quinine are necessary in the South, I increased my minimum dose, for intermittent fever, to fifteen grains given at once.”

Dr. Holmes was in the habit of giving thirty, forty, or more grains of quinine at once, in congestive fever. He says the largest amount of quinine he has ever given at a single dose, has been eighty grains; this is the extreme dose; the average quantity is about twenty grains. Quinine has even been given in larger doses than this; but I do not approve of this practice, as I consider these doses unnecessarily large, and they sometimes produce bad effects. The late Judge Willis, of Mississippi, informed me, some years ago, that he knew a case or two of insanity produced by excessively

\* See Amer. Journ. Med. Sci., Oct. 1846. Does not this show the folly of sending northern physicians with our soldiers to the South?

large doses of quinine. Moreover, I believe that ten, fifteen, or twenty grain doses, with a dose of laudanum, will have a better effect, and consequently do more good, than thirty or eighty grains of the quinine given alone. In addition to this, if the patient is thirsty, he should be allowed moderate quantities of cold or iced water, frequently repeated.

In cases attended with *coma* or *lethargy*, and in which deglutition cannot be performed, the quinine and laudanum should be given in double doses by injection, or a double dose of quinine (twenty-five or thirty grains), and one grain of sulphate of morphine may be applied to a blistered surface, as before directed. Dry frictions to the extremities, and along the spinal column, or with pepper, mustard, or spirits of turpentine, may be of some service as adjuvantia; as also heat, applied to them by means of hot rocks, bricks, bottles filled with hot water, or, if the skin is dry, a dozen ears of corn, just taken out of hot water, is preferable. If costiveness attends cases of this kind, ten grains of calomel and fifteen grains of rhubarb should be given with the quinine and laudanum at the commencement of the treatment, or as soon as deglutition can be performed. It may be necessary to repeat the calomel and rhubarb once or twice, with intervals of twenty-four or forty-eight hours. If nothing can be given by the mouth, resort to injections of spirit of turpentine and castor oil, in order to relieve the costiveness, when necessary. These remarks will apply to all cases of this disease attended with costiveness.

Some cases are attended with *languor*, *dullness*, *torpidity*, and *costiveness*, and require the same treatment as just given above, with the exception that in these cases the medicines can be given by the mouth.

Some cases are attended with great *restlessness*, *oppression*, *rolling to and fro in the bed*, &c., and very ob-

stinate *costiveness*, and require the same treatment. If the skin is dry, the cold dash may here also be of service.

In some of these cases, the bowels appear to be almost insensible to the influence of cathartics, and, therefore, it will be necessary to give some of the more active ones ; as spirits of turpentine and castor oil—and these may be also given by injection. If the patient cannot swallow anything, a drop of croton oil may be applied to the tongue. We should guard against too active and violent catharsis, though under these circumstances it is not likely to occur. Purging, as a general rule in this malady, should be avoided.

If the disease is disposed to assume the remittent form, with cotemporary costiveness, the calomel and rhubarb, as above directed, should be given every twenty-four, thirty-six, or forty-eight hours, till two or three doses have been exhibited. If the bowels do not respond to the aperient influence of these articles, some other should be given, so as to determine this effect. Extract of white walnut and dandelion is well suited for this purpose. The calomel is not solely given for its aperient effect ; in conjunction with the other remedies it has a tendency to relieve local congestions, which are connected with a sort of subacute inflammation, especially of the brain, as well as the viscera of the thorax and abdomen ; and, with them, has also a favorable influence on the secretions. It should never be given to the extent of producing salivation. In the costive cases above noticed, the quinine appears to coincide with cathartics in making the bowels more susceptible of their influence. If at any time the cathartics should operate too much, or too freely ; or, if irritation of the bowels, with too frequent discharges from them should be produced ; or if this condition should come on spontaneously, as the re-

sult of morbid action, it should be controlled by laudanum, opium, or morphine; and, if very obstinate, some of the astringents mentioned above may be associated with the laudanum.

In any of the above-mentioned forms of congestive fever, the quinine should be repeated in full doses every three or four hours, as long as the paroxysm lasts; after which it should be given in doses of from four to six or eight grains, from three, to four or five times a day, to insure recovery, and prevent the coming on of another paroxysm. If the quinine produces roaring in the head, or buzzing in the ears, this should teach us that it has had a good effect, is overcoming the morbid condition of the system;—after which, the too liberal and indiscriminate use of this article would be likely to prove injurious; therefore, when these effects on the brain are manifest, the quinine should be given in smaller doses, and after longer intervals.

As the system begins to rally, and *reaction* slowly develops itself, the body, or general surface, becomes warmer, and the warmth gradually extends to the extremities; the veins which are near the surface begin to look more full and prominent; the features and general surface, from being contracted and pale, become full, more expanded, and of a more florid hue, and the distress and anxiety of the patient are greatly relieved, unless there should be too much determination to some important organ, especially the brain; which, however, is rarely the case, unless such stimulants as brandy, wine, etc., have been improperly or too freely given. If this should be the case, or the reaction too great, it may be controlled by frequently and freely pouring cold water over the head and back of the neck, and indeed over the whole body; or, if less so, sponging the whole person, if the skin is hot and dry, and the exhibition of from

eight to twelve or fifteen grain doses of quinine, and one-third to a half grain of sulphate of morphine. If the stomach is not irritable, the addition of two grains of ipecac., or one teaspoonful of the tincture of lobelia may be proper. If the reaction or affection of the brain should persist, these should be repeated every four or five hours, suspending the morphine when the system has been brought under its influence; nor should the cold water, as above recommended, be sparingly used. The reaction, however, in congestive fever, is seldom very great, and is usually easily controlled.

If the fever runs into remittent or intermittent, the treatment adapted to these respectively is proper; being careful not to adopt a too antiphlogistic course, always avoiding general blood-letting, unless circumstances occur which most unequivocally demand a resort to it, and then it should be practiced with caution.

My object is to be brief and practical, therefore it is not my present purpose to undertake to refute the false theories and modes of practice which have been published. Some ingenious medical writers who have embraced erroneous views, and whose learning and talents enable them, with their captivating style and sophistry, to render their opinions plausible, indeed I should say, to enforce conviction in relation to their theories, have unfortunately led not a few astray. *Venesection*, recommended by Armstrong and others, was found to be improper some twenty years ago, by Dr. Beatty, of Maryland, which fact he made known to the public in the *Transylvania Journal*, in 1829. Still, with the history of the past before them, there are some who are yet misguided on this subject, who now occasionally resort to bleeding in congestive fever, but without doing any good (unless it exist in their imaginations, so as to *force* practice

to correspond with their false theories), to say nothing of the collapse and danger, perhaps, I should say, the fatality of this practice. When general blood-letting can be of any service, or when it is justifiable to resort to it, it appears to me that the two following cases, published by Dr. Lavender, point out the circumstances under which it may be of advantage, and the manner in which it should be practiced.

“H. S., aged eighteen, after a day or two of the usual premonitories, at ten A. M., Sept. 10th, 1841, became cold, restless, oppressed, with occasional rigors; could not be confined to his room; lay a few minutes in one bed, and then hurried to another. Extremities cold to the body, but some morbid heat about the head and chest. Was put into the warm bath,\* fainted, and was, with some difficulty, restored. Saw him at six P. M.; pulse barely perceptible at the wrist, one hundred and fifty, deep-seated, thready, and intermitting; skin very cold, but much complaint of heat, and sense of suffocation; frequent sighing, and interrupted respiration; remains but a minute in one position, and will not be covered; some watery purging; countenance pale, shrivelled, and anxious; eyes suffused and watery; intellect good. Ordered immediately brandy, camphor, and laudanum, with frictions of dry mustard. Was preparing sinapisms, when the attendants cried out ‘he is dead!’ On approaching the bed, found him motionless and pulseless; breathing had ceased, and no motion could be felt over the region of the heart; jugulars much distended. With the case,

\* From the instructions heretofore given, the reader is prepared to judge of the impropriety and danger of the resort to the *warm bath* in such cases as this. The *cold dash* would, no doubt, have been of much more service; and quinine, ether, and laudanum would have been preferable to the brandy, camphor, and laudanum; though these latter may be resorted to when the others are not at hand.

of the day before, fresh in my mind, I instantly opened a jugular vein, which bled freely. In about one minute after, the blood began to flow, the patient breathed, and the pulsations of the heart were again manifest. Sinapisms, lotions, frictions. Brandy and water, almost thickened with quinine and camphor, thrown into the stomach. In ten minutes he breathed freely, and swallowed without difficulty. In twenty minutes, he spoke rationally, and took readily whatever was offered him; pulse could be counted at the wrist, one hundred and fifty. For some hours he rested well, and hopes were entertained of successful reaction. He sunk eight hours after the bleeding."

Second case, alluded to above: "Sancho, a colored man, aged thirty-five, taken on the 4th of September, 1842, without any premonitory symptoms, and soon sunk into collapse. Saw him at ten P. M., eight hours after access. Insensible; low, muttering delirium, and rolling on the floor, but now quiet; eyes fixed; pulse a mere flutter; breathing laborious and rattling; supposed to be dying.

"The brain appeared to be the seat of congestion, he having been insensible from the access; opened a temporal artery; bled imperfectly; opened a jugular; bled freely, at intervals, for an hour or two, with marked improvement of symptoms; about twenty fluidounces; rubbed all over with spirits capsicum and mustard; cold dash to head, sinapisms to feet; stim. enemata; spirits quin., camph. liberally. In the course of twelve hours, one drachm calomel had established free secretion from the liver and bowels; reaction took place; a common remittent followed, which yielded to ordinary remedies."

Dr. Lavender then makes the following judicious remarks on the use of blood-letting in this disease:—

“Although a few cases like the above have induced me favorably to regard bleeding from the jugular vein, in desperate cases of congestive fever, or in which congestion of the brain exists, yet I am compelled to regard the use of the lancet, in this malignant form of miasmatic disease, as a most hazardous and often fatal practice.

“During the progress of reaction from a congestive chill, inflammation of the stomach, liver, or other important organ, sometimes makes its appearance, accompanied by fever of high excitement, as a sequela of the engorgement of these organs. Such cases may require topical, and if the inflammatory symptoms run high, general blood-letting. But while the distinctive symptoms of congestion remain, while there are great restlessness and oppression, quick, intermitting, or compressible pulse, laborious breathing, especially if there is no congestion of the brain—the lancet should not, for a moment, be thought of. Even where the symptoms have, in a measure, given way, and reaction been partially established; when the heat becomes equalized, oppression alleviated, pulse full, and slightly resisting—even then, a small bleeding may, and a large one will, almost inevitably, bring on a rapid and fatal collapse.

“There is yet another condition that deserves marked attention, because it is so likely to betray the young practitioner into the use of the lancet. It is, when a congestive attack has yielded to the influence of quinine; reaction appears to be complete, natural temperature is restored to the surface, pulse becomes full and flowing, with a peculiar swell under the finger, and slight sensation of resistance. At the same time there is a feeling of restlessness and apprehension; dull headache, with fullness of superficial veins. The patient complains of oppression, and often requests to be bled. Open a vein, and the blood flows freely, looks dark and thick. When

eight or twelve ounces have been drawn, the bleeding suddenly stops, the venous fullness has left the surface, which becomes pale and shrunken; the pulse quick and thread-like; an indescribable sense of sinking comes over the patient; he cannot be controlled, but tosses in bed, or rises to his feet and falls. In a few hours death closes the scene. At other times you may bleed freely, in such cases as the above, with relief to the head, and no perceptible ill effects for one or two hours after the bleeding, and when you begin to congratulate yourself upon your success, the patient becomes faint, nausea and vomiting follow, and a few hours may close the scene.

“In this latitude, fevers of any kind do not bear the lancet well. Congestive fever does not make its appearance till the system is greatly weakened by long-continued and excessive heat. When it has made its attack, the vital force is very much exhausted, and the patient is fast falling into collapse. In such cases as this, I would earnestly say to my young professional brethren—Beware of the lancet! Be assured, without proving by sad experience, that the lancet, instead of being ‘the anchor of hope,’ is emphatically the sickle of death in congestive fever.”\*

The observations of Dr. Lavender, in relation to opening the jugular vein, appear to correspond with some experiments made by Dr. J. Reid, on the lower animals; who says, “that disgorging the right side of the heart, when its contractions were enfeebled or suspended, by opening the jugular vein, had, in some cases, a decided effect in renewing its action; and the same may, doubtless, occur from bleeding practiced under the circum-

\* Those who wish to see the interesting paper from which the above extracts are taken, will find it in the Amer. Journ. of Med. Sci., July No. 1848.

stances mentioned. It is important, indeed, to bear in mind, that the congestion of the cavities of the heart speedily arrests the action of that viscus." (*Dunghlison.*)

As the quinine, laudanum, and other means used for congestive chill, begin to manifest their favorable influence, all the distressing symptoms and abnormal conditions begin to abate; the frequent, feeble, and irregular pulse, becomes slower and more ample; the breathing becomes more free and full; the oppression and restlessness gradually abate; the general surface and extremities approach a natural temperature, and become covered with a warm perspiration, approaching a healthy condition. If the region about the chest and head has been in a state of morbid heat, it becomes cooler; the sensation of inward heat is greatly relieved; the disturbances of the brain are modified; the patient becomes calm, and perhaps falls into a comfortable sleep. When these favorable symptoms occur, with subsequent proper treatment and attention we may predict, with almost absolute certainty, a favorable issue, a speedy convalescence.

After a paroxysm is over, quinine should be taken as heretofore advised; but if the individual resides in a highly malarious region of country, there probably is some danger of a recurrence of the paroxysm in the next twenty-four hours, or the second or third day. When this is to be feared, the patient should take a large dose of quinine (ten or fifteen grains) and laudanum, about three hours before the expected period of recurrence.

As quinine is so important an article in the treatment of congestive fever, and other southern diseases, and as its too liberal and injudicious use, on the one hand, may be productive of injury, while, on the other, a timid resort to it in small doses may not only be productive of

injury directly, but indirectly, by letting the patient die, a brief notice of the virtues and influence of this article may here not be unwelcome to the reader; especially as, while there are prejudices entertained against it, by some, others are too enthusiastic in its favor; and no doubt, now and then, produce deleterious effects by its injudicious use. Dr. R. S. Holmes remarks, that "It is the continued small doses of this agent, that harass and irritate. A patient, at the North, takes one or two grains almost daily, for weeks, until he has swallowed sixty or more grains in the course of a month, and then is indignant at the idea of a fifty or sixty grain dose being given at once in Florida, which suffices for the same period." This, as all may readily see, is bad logic. Suppose an individual were to take as much strychnine or arsenic at one dose, as he could bear without injury, in a month. Would not death speedily ensue? It is true, that quinine may be used with much greater impunity than these articles. But again, suppose that an individual were to eat, at once, as much pork, bacon, or beef, or any other article, as is usually consumed by him in a month. What would be the result? Dr. Holmes says: "Quinine, as a remedy for periodicity, is to be given, regardless of any existing state of inflammation. Never give quinine in divided doses, when directed for the immediate cure of a periodical disease. To be certain of the operation of quinine in a constitution with which you are not acquainted, it must be given eighteen hours before the desired result. In emergent cases it may be given in the lowest state of prostration, or the highest grade of the fever. As a general rule, fifteen to twenty grains will be necessary for an intermittent, and thirty to fifty for a congestive fever." The diseases in Florida, no doubt, require large doses of quinine; but I think Dr. Holmes gives it in unnecessarily large doses, and too exclusively; as I am

inclined to believe, from my own experience, that from ten or fifteen to twenty grains, with a dose of laudanum, will have a better effect than the huge doses of sixty or eighty grains of quinine alone. Dr. H. remarks, "If the physician in the South can be blamed for his too great enthusiasm for the specific (if there is such a thing) for all these ills, he has certainly chosen a hand-maiden worthy of his worship. To one accustomed to look at the slow and languid operation of medicines, in fevers at the North, and the want of faith with which they are so often given, the operation of this medicine appears miraculous; it is only equalled, when it has fair play, by its certainty.

"The immediate effects of a large dose of quinine are, buzzing and murmuring in the ears; a partial deafness, which often continues for twenty-four hours; a great sense of fullness about the head, and often a dull pain across the forehead; there is generally more or less excitement or partial delirium of the mind, without exciting the spirits in any degree. I have seen patients under the effects of quinine, wander and talk incoherently, as if from the influence of alcohol. Occasionally, it will produce a pricking sensation in the skin, and a quivering in the muscles of the fingers and eyelids. One patient I knew who was always made perfectly insane, and beside himself, so that he had to be confined, even by the administration of five grains of quinine. I have never seen any of these symptoms last much longer than twenty-four hours."

The remarks of Dr. Lavender perfectly express my own views and experience, and may be regarded as an infallible rule in the exhibition of quinine. They are as follows: "I am by no means persuaded that quinine is a harmless agent, and may be given, in almost any quantity, without producing hurtful consequences.

When pushed too far, painful fullness of the brain, alarming sounds, and ringing in the ears, deafness, slight delirium, twitching of tendons and hiccough, will be some of the consequences. Caution must, therefore, be exercised, not to push this valuable remedy too far. *Overwork the brain, and the vital powers may become exhausted by too long continued and excessive action. In this way, I have no doubt, frequently repeated heroic doses of quinine exhaust the vital powers, cause indirect debility, and thus hasten that very collapse which quinine, judiciously administered, is so well calculated to avert.*

“In like manner brandy, and other stimulants, though valuable in supporting the vital force, and preventing collapse, or in arousing the system from that state, and for such purposes, may be given in large quantities; yet may they be pushed too far, or be continued too long, and thereby aid in producing that condition which they were intended to prevent. They are useful, and may be given liberally, while they act in harmony with the system; quiet the stomach, soothe the brain, and invigorate the circulation. But if they cause pain in the stomach, headache, or symptoms of intoxication, they should be used more cautiously, or be discontinued altogether. A patient who may have borne a pint of brandy in twelve hours before reaction, may not bear an ounce afterwards. The same observation is applicable to quinine. Although twenty grains of the sulphate may have been taken, with the most decided benefit, in a case of collapse, or in a case of congestive chill threatening collapse, yet, when reaction has been established, one grain may be sufficient, and even that not always required, and sometimes hurtful.” That is, if the reaction is a healthful one, or if the system is already as much under the influence of quinine as it can conveniently bear; for we know that if quinine be given in large doses, during open febrile excitement,

it acts as a powerful sedative in controlling the fever. When quinine is pushed too far, is overworking the nervous system, the brain indicates this overworking by roaring in the head, sounds like guns being fired off in it, or the roar of thunder, &c.; the patient is at the same time very restless, turns from side to side, and throws his limbs here and there, not seeming to care if he throw them with some force against the bedstead or other hard substance, which would, under other circumstances, hurt them; he is much oppressed, desires the room to be freely ventilated, and also desires to be fanned; to have cold water to drink, which probably the irritable stomach may soon reject; and, perhaps, also desires some of it sprinkled on his face and breast; perhaps he will get up and rush to the door or window to breathe the cool air, or go to another bed, if he do not stagger and fall on the floor.

When the patient is in this condition, give him a large dose of calomel, say from twenty to forty grains, with a grain of morphine; this tends to allay the irritability of the stomach, and otherwise acts favorably. Strip the patient, and pour cold water, first over his head, neck, and shoulders, and then freely and repeatedly all over him, till this morbid condition is controlled. After the water has pretty well accomplished the desired object, constantly fanning the patient will afford much relief. If the calomel should not act on the bowels in twelve or eighteen hours, a dose of calomel (ten grains) and jalap (ten grains), or something of the kind, should be given. Such cases as these are dangerous, but a prompt resort to the means here recommended may soon bring about an amelioration of the symptoms, and you may save the life of your patient.

The *diet*, in congestive fever, should be of a moderately nourishing quality, allowed in such quantities as are

agreeable and acceptable to the stomach, and taken from three or four to five or six times a day ; if often, it should be given in small quantities. The object should be to nourish and strengthen the patient, without overloading and oppressing the stomach, which would have a contrary effect. Beef, chicken, or squirrel soup, or something of the kind, made palatable with salt, pepper, &c.; coffee, rice, or rice and chicken soup, etc. etc., may answer this purpose—consulting the patient's desires and partialities; not allowing, however, such articles as would manifestly be injurious. Usually, little or no food is desired till convalescence is established.

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## CHAPTER XVIII.

### REMITTENT FEVER, SOMETIMES ERRONEOUSLY CALLED BILIOUS FEVER.

IN its attack, remittent fever may be primary, or it may be sequent to intermittent or congestive fever. Well marked cases of intermittent and remittent fevers are easily distinguished from each other; but it is often the case that one runs so gradually into the other, that at times it is difficult under which head to place either; indeed, it may be said to be intermediate, partaking of the nature of each for a time, till the one or the other becomes more distinctive. An intermittent may suddenly assume a remittent form; but most commonly the exacerbation, or hot stage of an intermittent, becomes more and more protracted, till it merges into the remittent form: the latter, whether primary or secondary, may yield and be succeeded by the intermittent form; or, by

negligence or bad treatment, it may become more and more severe. A remittent is sometimes easily changed to an intermittent by a venesection, and sometimes the reverse of this occurs. It is very frequently the case that a patient is attacked with ague and fever while in the debilitated condition which succeeds remittent fever, especially if tonic and other hygienic measures are not persevered in till he acquires a considerable degree of strength and vigor.

CAUSES.—As the causes of remittent fever, as well as the other forms of malarious fevers, have heretofore engaged our attention in the early part of this work, a reiteration here would be unnecessary. Recently, I have received a notice of a work now in press, by Dr. F. Fort, of Milledgeville, Georgia. In relation to the *history* of bilious fever in Milledgeville, and its neighborhood, he says: “In a state of nature this was a rich, variegated country, covered with majestic forests, and tall, waving grass. The low lands on the sides of the streams were covered with heavy cane-brakes, or unbroken beds of reeds. Such was Milledgeville and the contiguous country, till about the year 1807, when it became the residence of the white man. In this state of primitive grandeur and unequaled beauty, this country was decidedly healthy. I was here soon after the Indian inhabitants had left it. I witnessed its rapid settlement; the destruction of its forests; the extermination of its cane-brakes, its reeds, and its grass, and the laying bare of its bosom to the sun.

“Bilious fever appeared as suddenly as the face of nature had been changed by the hand of man. For eighteen years it was a formidable epidemic during the summer and fall seasons. The mortality was greatest where the lands were most fertile. Milledgeville, located

on a spot of great fertility, was, perhaps, the greatest sufferer. No tables of mortality were kept; but I cannot be mistaken in placing the deaths, from bilious fever alone, as high as five per cent. of its whole population each year, from 1808 to 1812 or '13. This mortality, happening in a few months, gave to the disease the terror of a pestilence. Forty years have now elapsed, and great has been the change in the face of this country. It has been reduced in many places almost to sterility. Its gullied hills, and deeply sanded bottoms have become dry. The bilious fever has almost ceased its annual visit. The annual deaths in Milledgeville, from this cause, which I have said were at one time as many as five in the hundred of its population, have gradually diminished, so that within the last five years they have not exceeded one in two thousand. The facts, which have attended this great change, cannot be uninteresting." Dr. Fort then proceeds to speak of the causes as follows: "If there were no summer, there would be no bilious fever. But to what degree the thermometer shall rise, or how long continue at any degree of heat to produce this disease, is not ascertained. The process is, I think, not sudden. I have seen, in the month of June, the river overflow its banks, and subside under the greatest heat of summer. No fever appeared in five or six weeks, but its onset was then sudden and violent, and it only subsided on the coming of frost. No example is given of the appearance of this disease in winter, except in persons who had contracted it beforehand; nor is it agreed what length of time the infection may remain in the system.

"So far as it regards climate, it appears that summer heat and moisture must combine to produce bilious fever; before absolute dryness, or thorough wet, it equally disappears. I have seen bilious fever appear in July, dis-

appear in the driest and hottest weather of August, and reappear on the coming of rainy weather in the next months. These observations are not new. In the East, it has been remarked that the overflowing of the delta of the Ganges and Indus, is the signal of returning health to their inhabitants."

Professor Dickson, formerly of Charleston, South Carolina, now of New York, remarks, that bilious remittent fever is "the endemic scourge of certain well-known localities, in which it is not unfrequently aroused into epidemic and pestilential sway."

Dr. Stephen N. Harris, of Georgia, makes, in substance, the following remarks; as I have not his paper before me, I do not vouch that they are precisely verbatim. He is of opinion that malarious fever may be modified by the influences concerned in producing typhus fever. The late Professor Dewees believed that typhus, when simple, is always of the continued form. Should the patient, however, have been exposed to miasm, it may cause typhus to assume a disposition to remit, but not without. The subject is one of interest, as showing the mixed phenomena of combined agencies. Dr. Harris believes malignant remittent fever to be a combination of typhoid and malarious fever, with local irritation or inflammation. This hypothesis is questionable.

In the length and severity of its exacerbations, other phenomena, and remissions, remittent fever, perhaps almost invariably, manifests its analogy to intermittent fever, by the observance of the quotidian, double tertian, triple tertian, or other types. For instance, it is well known, and often observed, by persons who attend on those who have remittent fever, that the patient will be worse every other day, and so on.

## FORMS OF REMITTENT FEVER.

From practical observation, I believe Remittent Fever may conveniently be considered under the four following forms, namely :—

1st. THE MILD, OR SIMPLE FORM.

2d. THE CAUSUS, OR INFLAMMATORY FORM.

3d. THE NERVOUS, OR COMATOSE FORM.

4th. THE TYPHOID, OR DYSENTERIC FORM, OR STAGE.

One or other of these forms are generally well marked and sufficiently distinctive, but it should be observed that some cases may hold an intermediate link.

1st. THE MILD, OR SIMPLE FORM.—This form may succeed to intermittent or congestive fever, or it may be primary. The *premonitory symptoms* and corresponding phenomena are analogous, if not identical, to those of intermittent fever. A feeling of *malaise*, dullness, and, perhaps, slight, dull, obscure pains in the back and lower limbs or shoulders and head, may precede an attack for several days ; or the forming stage, or stage of oppression, may appear without these premonitions. This stage usually makes its appearance with hebetude, lassitude, aching in the loins, hips, and knees, in the head, perhaps vertigo, and occasional fugitive pains elsewhere ; the extremities become cold ; the face may be pale and features contracted, or the face may present more or less fullness and redness ; a chill or rigor less or more manifest may ensue, with interrupted, increased, and oppressed respiration ; pulse small, quicker than natural, feeble and variable ; thin, whitish coat on the tongue, towards the root of it, which gradually disappears near the tip and edges, or rather becomes more and more faint there. Usually, there is an indescribable, unpleasant sensation

in the stomach and anorexia; the bowels are commonly inclined to costiveness, but not always.

After a time, reaction gradually manifests itself; the chilly sensations may have continued, and now alternate with flushes of heat; the general surface and extremities become warm, and are dry; the features become more full and red, but usually only moderately so; the eyes may look somewhat reddish, and, in some cases, yellowish; the pulse becomes more full, but not hard, and perhaps not more frequent; or, in some cases, even less so than during the earlier part of the forming stage; the mouth, which was in the previous stage rather moist and clammy, becomes more dry, and the tongue redder at the tip and edges; and, after the febrile condition lasts for some time, the whitish fur extends, and becomes of a whitish yellow, yellowish, and, still later in the disease, of a yellowish brown, or brown hue; the respiration is now more easy, though still somewhat oppressed, with an occasional deep inspiration or sigh; generally there is more or less anxiety and restlessness; commonly thirst, but not invariably so; usually dull, aching pains in the lumbar region, lower extremities, neck, and head; the painful sensation in the stomach is sometimes attended with nausea and vomiting of a ropy mucous and yellowish bile, especially if the vomiting continues for some time. In some cases, the skin, in addition to being warm, or hot and dry, is tinged with a yellowish hue.

After this febrile condition reaches its acme, which it usually does in a few hours, and most commonly in the afternoon, and which is not often high in this form, it gradually abates, lasting from nine to eighteen hours, till some transient perspirations occasionally take place, especially about the head and upper part of the chest,

and the general surface assumes a natural temperature, or nearly so. Now comes the period of *remission*, which is of longer or shorter duration, and, in a large majority of cases, takes place early in the morning, during which time the patient feels much better, in many instances nearly or quite well, and may have some appetite. After this remission lasts for a time, the feet and hands usually become cooler than natural, which is again followed by reaction, the fever beginning gradually to rise. If nothing has been taken to modify it, the excitement at this time will probably be greater than in the previous paroxysm.

Thus the fever may continue, from day to day, till it runs its course, which may occupy one or two weeks, or it may merge into intermittent fever; or the paroxysms may become more and more severe and protracted, and merge into one of the other forms of remittent fever; but, almost invariably, under timely and proper treatment, it may be arrested in a day or two, or, if neglected for a few days, it may require several days to arrest it.

**SECOND FORM—THE CAUSUS.\***—The *causus*, synchal, or inflammatory form, may appear like an ordinary intermittent, or like the first form of remittent fever, but frequently makes its appearance without any previous chill or rigor. In this form, the stage of reaction is much more violent, with greater determination to certain organs, the most common of which are the brain and spinal marrow, lungs, stomach and bowels, liver, spleen, &c. &c.; but these determinations (irritation, inflammation, or congestion, or these variously combined) are far from being uniform, sometimes predominating in

\* *Causus* is derived from the Greek, signifying "I burn."

one organ or organs, and, in other cases, some other organ or organs being most prominently affected, each being distinguished by corresponding symptoms; if the brain is much affected (whose functions are of the greatest importance), it will be indicated by pain in the head, or headache, more or less intense, with a sensation of fullness or determination to the head, throbbing of the carotid and temporal arteries, confusion of mind, perhaps slight delirium, vertigo, intolerance of light and sound; or the patient may be stupid, dull, and inclined to doze or sleep. In this form of remittent fever the respiration is hurried, irregular, and uneven; and, according to the extent of the pulmonic complication, there will be pain and a sensation of stricture in the chest, which is increased by a full inspiration; and the respiration will be more or less laborious and painful; the countenance will be more anxious, and the face of a more or less purplish or livid hue; and this pulmonary complication, when of great extent, or protracted, has an influence on the pulse, making it feeble, irregular, and inelastic; or, perhaps, it would be more proper to regard these as cotemporary, and referable, in a great measure, to the same cause. According to the extent of the implication of the spinal marrow, or any particular portions of it, will be the pain or aching in the back, soreness and aching of the limbs, and muscular debility; with perhaps more or less soreness in every part of the body; in some cases tingling sensations in the extremities, partial paralysis, dysuria, &c. If the base of the brain about the *medulla oblongata*, and the upper portion of the spinal marrow, from which nerves arise and are distributed to the thorax, are much affected, we may expect to find corresponding pulmonary distress, and complication. If the spinal cord is more prominently affected lower down, we may observe corresponding implications

of the contents of the abdomen; or, if still lower down, the lower extremities, and perhaps some of the contents of the pelvis, are correspondingly affected, great muscular debility, &c. According to the extent of the implication of the stomach, will there be irritability, nausea, perhaps vomiting, a sensation of pain, soreness, distress, or an uncomfortable sensation, oppression, or weight, or an indescribable uneasiness and heat in the region of the stomach; in a large majority of cases, the thirst is very great, the patient desiring cold drinks almost incessantly. When vomiting takes place, any food that may be in the stomach, with water and mucus, is first thrown up; if the puking continues for some time (or it is occasionally the case at the commencement), yellowish bile, in some cases greenish, blue, dark brown, &c., is thrown up, which affords temporary relief. The bowels are generally costive, but, in some cases, the patient is troubled with tormina, tenesmus, thin, acrimonious, offensive, and frequent stools. If the liver is much affected, it will be indicated by a sensation of fullness and pain, especially if pressure be made over the region of it, in the right hypochondriac region, which lies to the right of the stomach. In some cases there is concomitant pain in the shoulder, but perhaps this latter is not the effect of the implication of the liver, as has been supposed by many, but dependent on implication of the spine, about the cervical region; or, indeed, by reflex action, the morbid condition of the liver may be the cause of this pain by first causing a morbid condition in the corresponding portion of the spinal marrow. The spleen, pleura, and other parts, may also suffer from their nervous implication and determination to them; the kidneys, too, are more or less implicated, and the urine scanty and high colored. The general surface is hot and dry, and expanded or full, the superficial vessels being full and prominent; the face

is flushed and turgid; eyes red and suffused; countenance expressive of anxiety and distress; restlessness and turning from side to side, or dullness and inclination to doze or sleep. The tongue is of a bright red at the tips and edges, and covered at first with a white fur, which soon changes to a whitish yellow, and then to a yellowish brown, and brown. The pulse presents some variety; in the more northern portion of the United States, in those who have recently emigrated to the South, and in those of a vigorous and sanguine temperament, it is full, more or less hard and bounding, and commonly from about 90 to 112 or 125 beats in a minute. In those who are residents in the more southern portions of this Union, the pulse is less full, and less hard and bounding; it may, indeed, be rather small, with not much hardness, compressible, with, perhaps, some abruptness and irregularity, usually from about 90 to 110 or 115 per minute.

This febrile condition may last from twelve to twenty hours, when the period of *remission* gradually makes its appearance, with relief of all the distressing attendants. If this is slight, perhaps there will be but little moisture on the temples, about the face and upper part of the chest or neck; which, however, if it does occur, is transient. If the remission is more marked, a pretty free perspiration may appear all over the general surface, and the patient may fall asleep and enjoy a tolerably comfortable slumber—during which he will be apt to have some distressing and frightful dream; or, indeed, though rarely, in the first or second remission, the fever may be entirely absent, making a complete intermission, and, for a few hours, the patient may feel almost well.

After a remission more or less complete, and of a longer or shorter duration, the febrile condition again

gradually comes on, or increases, generally with augmentation of all the distressing phenomena which attended the previous paroxysm; and if the proper treatment is not soon resorted to, exhaustion and prostration of the vital powers, with local lesions, corresponding with the previous determinations to certain organs, may occur. Thus, this variety may last from a few to about twelve days, the patient becoming more and more prostrated, the vital powers gradually failing till death closes the scene; or he may sink into the third or fourth form, or variety of remittent fever; or each succeeding paroxysm may be lighter and lighter, till, in from seven to ten, twelve, or fourteen days, convalescence may take place, and the individual slowly recover.

The *causodes* is but a milder form of the *causus*.

**THIRD FORM.—THE NERVOUS OR COMATOSE FORM** or variety of remittent fever, is evinced by great prostration and debility, neuroblacia, or diminished sensibility of the nervous system, stupor, with a continued disposition to doze or sleep, from which the patient may be aroused by calling loudly, or by shaking him, in very severe cases; but he soon relapses again into the comatose condition. He seldom or never complains of any pain. If asked how he is, he replies, "tolerably well," "very well," or what amounts to the same; and almost immediately drops off into a doze. Expression of the countenance and eyes dull, the eyes somewhat sunken, the white of them moderately injected, or of a dull reddish hue, generally; the face has a narrow and contracted aspect, especially after the fever has lasted for several days; audition is impaired—dull; the skin is warm, or rather hot, and obstinately dry; the pulse for the first three days is usually slightly increased in fullness and frequency, but yielding under the finger; afterwards becoming weaker, and, in some

instances, slower, even below the natural standard ; the mouth is inclined to be rather dry ; frequently but little, moderate, or no thirst, till towards the latter period of the disease, or on the eve of convalescence, when the desire for cold water is considerably increased. The tongue is covered, at first, with a white fur, which soon becomes yellow, then yellowish-brown, or dark, and very thick, rough, and dry ; the tip and edges are increased in redness ; the urine is scanty and high colored ; the bowels are usually costive (but respond to cathartics without much difficulty), with borborygmus or rumbling in them, which latter increases as the disease advances. For the first three or four days there is fullness in the region of the stomach and abdomen, with, perhaps, in some cases, over the region of the liver also. This fullness of the stomach and abdomen subsequently subsides, and the abdomen is flattened, instead of presenting a fullness or prominence. In many cases there is scarcely any remission perceptible till the third or fourth day, when the feet and hands may be observed to get cool (especially if uncovered), and remain so for a while—say an hour or two, or longer, once a day ; which most frequently takes place about ten or eleven o'clock in the morning.

This form of remittent fever, or some of its modifications, is, perhaps, that which is termed by medical writers "*congestive remittent*." In some of these modifications, the reactions are more manifest, or considerably greater, and the remissions more distinct ; there is also more anxiety and restlessness, especially when the period of congestion comes on, and in a less degree, perhaps, during the subsequent febrile excitement. In some cases, in which there is determination to an important organ, as the stomach or brain, for instance, there is severe, agonizing pain ; which, however,

is greatly modified or entirely absent in the period of remission, except pressure is made on it, as in case of the stomach, etc. If these repeated congestions are not arrested, the organ so affected will become more and more deeply involved, and death may ultimately ensue; but with prompt and proper treatment the morbid action may soon be controlled, and convalescence established. Large doses of quinine and opium, and an occasional dose of calomel (from ten to twenty grains once in twenty-four hours), are the principal remedies to be relied upon.

In severe and protracted cases, there is low, muttering delirium, picking at the bed-clothes, or imaginary things; parched, dry skin; quick, wiry pulse; dark, dry tongue, and dark sordes about the teeth; the urine discharged involuntarily; the bowels costive.

An attack of this form of remittent fever may be primary, or it may succeed the intermittent, or either of the two forms of remittent fever which we have already considered, especially the second—the *causus*. This is justly considered a dangerous form of remittent fever, requiring strict, close, and constant attention. It may terminate fatally in eight or twelve days, or assume the typhoid or fourth form or variety of remittent fever. But, under timely and proper treatment and attention, it may generally be cured—rarely prove fatal; yet, even under the best management, it is apt, in many cases, to be tedious and protracted, lasting twelve, fifteen, or twenty days, sometimes longer, before convalescence is completely established. In milder cases, it may be arrested in a few days.

**FOURTH.—THE TYPHOID FORM, OR STAGE OF REMITTENT FEVER,** is usually sequent to the second (*causus*) or third (nervous or comatose) forms; but in consequence

of improper treatment, especially the use of irritating cathartics, it may be brought on in the first (simple or mild) form; or it may be induced in this manner in the treatment of intermittent fever; and, under these circumstances, in its early stages, is frequently attended by very severe, griping pains in the abdomen. It may be brought on in the first few days after an attack of either of the other forms of remittent fever, but it most commonly makes its appearance from the sixth to the twelfth day; and, if it does not sooner terminate fatally, it may last two or three weeks, or even longer. Prof. Dickson says he has "known cases protracted, in three instances, to 30, 35, and 50 days, though the average would scarcely reach beyond 15 or 20."

This form or stage of remittent fever is indicated by the following symptoms: Decubitus, generally dorsal, or, in other words, lying on the back, with a disposition to slide down towards the foot of the bed, sometimes with the knees drawn up; the cheeks are usually of a purplish or brownish red flush, which is increased or becomes more prominently developed once a day, generally about two or three o'clock, P. M., and lasts for several hours; this is, in many cases, more manifest every other day, the patient being worse. There is a disposition to coma and stupor, with muttering delirium, from which the patient may be aroused by speaking rather loudly to him. The countenance is haggard and dull; the eyes sunken and nearly closed; the forepart of the eyeball being drawn up under the upper eyelid, so as to make visible the white and lower part of the eye. The heat of the general surface is often but slightly, if at all, increased, except for the first few days after the attack; in many cases, higher over the abdomen, chest, and head, and is commonly dry, with occasional moisture about the temples; or perhaps it

extends over the body, but is frequently only of short duration. In severe cases, petechiæ, or small red spots, like flea-bites, appear on the body, and may extend to the face and forehead. The feet and hands are inclined to become cool, especially if uncovered; and, like the other forms, I believe this is most likely to occur about 10 or 11 o'clock in the morning. The pulse is increased in frequency, small, in some instances corded, but almost invariably feeble, compressible, yielding under slight pressure of the finger; though, in some cases, especially in the earlier stages, there is some degree of fullness. The tongue is dry and chapped, and covered with a brown or dark coat, which in many cases is subsequently thrown off, exposing to view a rather smooth, red, and dry surface; when thrust out, it is pointed and tremulous, and the tip and edges are very red; in the latter period of the disease, there are dark sordes on the teeth, and in some cases on the lips. The stomach will generally retain medicines without much difficulty, but it is at times irritable, and nausea and vomiting are easily provoked; there is a disposition to frequent, copious, watery, colliquative, alvine discharges, which are usually of a brownish appearance, sometimes resembling the washings of beef, the odor of which is sometimes very offensive; borborigmus, or a rumbling noise in the abdomen, perhaps always attends, in a greater or less degree, and in many cases meteorism, tympanites, or fullness and hardness of the abdomen. There are great languor, debility, and prostration of the vital powers; *subsultus tendinum*, and nervous tremors, on motion. The patient seldom complains of any griping in the bowels, except in the earlier stages of the disease. Sometimes there is giddiness, *tinnitus aurium*, or roaring in the ears or head. The urine is high colored, and at times of an of-

fensive smell. Dull moaning, stertorous breathing, hic-cough, and involuntary discharges are ominous of an unfavorable termination, but there may be recoveries in such cases if the proper treatment is promptly and vigorously persevered in; but when are added to these unfavorable symptoms a disposition to faint whenever the head is raised up, a cadaverous sweat, or hemorrhages or bleeding from the bowels, stomach, nose, etc., the case will soon terminate in death.

This form or stage of remittent fever occurs much more frequently than the third; and I have no doubt but it is most frequently brought on by the abuse of cathartic medicines, and neglecting to treat the prior stages of the fever properly.

This form of remittent fever closely resembles the genuine typhoid fever, so much so, indeed, as to make it plausible to suppose that the causes of each may be so combined as to give this character to the disease. Professor J. P. Harrison, of Cincinnati, Ohio, says, that, "in this typhoid state, there exists a lesion of the mucous coat of the lower portion of the ileum. This lesion, at first inflammatory, becomes ulcerative, and often destroys the life of the patient by perforation of the entire intestinal tube." And he further remarks: "Permit me to notice here, in a passing way, the close resemblance which the typhoid stage of bilious fever bears to genuine typhoid fever. The structural lesion of the agminated glands of the ileum is very similar, as you will perceive by this specimen, taken from a subject who died of a protracted attack of bilious remittent fever. You perceive the ulceration along the lower third of the ileum; here is one point, in which there is an almost entire perforation of the intestinal tube. Still, I do not contend for the identity of the typhoid stage of bilious remittent

fever and genuine typhoid fever.”\* Some years ago, Professor Harrison affirmed that inflammation, terminating in ulceration, is a frequent sequel in protracted attacks of bilious† remittent fever, and that the ulceration is commonly found in the glands of Peyer at the lower end of the ileum.

THE PROGNOSIS IN REMITTENT FEVER generally, and especially when timely and proper treatment is resorted to, may be said to be favorable, though in some localities, and in different years, it appears as an endemico-epidemic, and sometimes assumes a more than usually malignant type. Professor Dickson says: “From all that I can learn on the subject, I am not disposed to rate the proportion of deaths within our city (Charleston) at more than one in thirty.” The Professor then pays a compliment to the practitioners in the South and South-West, in the following language, from which we may infer that the mortality in the North is much greater. He says: “From the authentic records of its mortality, it is certain that the proportional success of the modes of treatment in the South and South-West, must be greater, or that the violence and fatal tendency shown by the disease must be less than in other malarious regions.” I believe all writers, both northern and southern, regard the remittent fevers of the South as much more violent and severe than the same disease occurring in the North.

\* In a clinical lecture to his class in 1848. *West. Lancet*, April, 1848.

† I regret to see that such men as Professors Harrison and Dickson continue to use the designation “Bilious Remittent Fever;” not only because it is erroneous, the liver, in a large majority of cases, being much less implicated than other parts, but because also it leads themselves, and many of those students who regard this teaching as orthodox, to a too liberal and indiscriminate use of calomel and blue mass; a practice which has been inculcated by Dr. Cooke, and others, and which has been a great curse to the people of the south and southwestern States.

In 1827, Dr. Dickson treated 188 cases, and in 1835, 123 cases, making 311. "In each year there were three deaths, six in all, making one death in about fifty cases taken promiscuously." According to my experience, in those cases that are properly treated death is very rare indeed, probably not more than one in 80 or 100. Though if neglected, or badly treated, the mortality is much greater, perhaps one in twenty or thirty proving fatal. These, however, are but general remarks; much depends on the locality, and the severity of the attack, and other circumstances, as the exposure or comfortable situation of the patient, &c.

In the *first* or *simple form*, the prognosis is nearly always favorable; but even this, in certain highly malarious localities, in different years, now and then requires to be well attended to, sometimes suddenly assuming a more serious aspect.

The prognosis in the *second form* (*causús*), depends on the violence or intensity of the disease, the extent of the pathological lesions of important organs, and the readiness or obstinacy with which these yield to treatment. These remarks also apply to the other forms. Low muttering delirium, picking at the bed-clothes, or imaginary objects, subsultus tendinum, hiccough, and weak, frequent pulse, are commonly regarded as unfavorable symptoms, though I have known several to recover from this dangerous condition. When are added to these extreme prostration, pulse so weak as scarcely to be perceptible at the wrist, fainting easily induced by raising up the head of the patient for a few moments, indicative of extreme debility, the transparent part of the eyes drawn up under the upper lids, a cadaverous smell or odor, and involuntary discharges from the bowels, death will, in all probability, soon ensue.

When there is relief of all the severer symptoms, the

remissions becoming more and more distinct and lengthened, with general and warm diaphoresis, the patient feeling calm and comfortable, and the mind clear, we may anticipate a recovery.

**PATHOLOGY.**—In the early stage of this disease, the pathological condition appears to be analogous to that of intermittent fever, but is more intense or tenacious; or, in other words, the system is brought more under the control of morbid action, or morbid influences, with, of course, less power on the part of the system to overcome this departure from a physiological condition. Some are of opinion that this disease is brought on by the influence of heat and moisture; others that it is induced by an imaginary poison in the atmosphere, which they call *miasm*. Others, again, refer it to other causes. But, be the causes what they may, the first manifestations of disease which exhibit themselves to us are referable to the nervous system. If the disease is brought on by miasm, this poison (if there is such a thing) may be inhaled, and enter the circulation *via* the lungs, and, during its latent period, may be inducing a peculiar pathological condition of the blood, which affecting the whole body, to a certain degree, the nervous system feels and informs us of these morbid encroachments by a feeling of *malaise*, or indisposition, with a greater or less degree of languor and dullness. Then, after a longer or shorter period, unpleasant sensations in the stomach, head, limbs, &c.; a rigor, or chilly sensations; most commonly; then comes reaction; or the febrile phenomena may make their appearance without the chilly sensations. In either case, the nervous system, and perhaps the blood, are morbidly impressed; and when such is the case, need we look for uniformity in the pathological conditions found on *post-mortem* examinations? To

use the language of Dr. Billing: "From the very nature of FEVER, which I have described to be a disease essentially affecting the whole nervous system, it follows that the functions of the viscera must be disturbed: and though, as just pointed out, sometimes disease of one organ predominates, sometimes of another, yet *every organ* suffers more or less congestion in *every fever*, from the loss of nervous influence. Hence, those who are advocates for fever being a something that pervades the whole system, say you cannot refer it to any one fixed seat; and, on the other hand, those who have taken up the notion of fever being located either in one organ or in another, seldom or never fail, in post-mortem examinations, to find proofs of their own opinions; for, as no organ escapes disease, that which is sought for will be found, whether the opinion of the author lead him to anticipate 'cerebritis,' 'gastro-enteritis,' or 'pulmonic congestion.'" And I will add, "disease of the liver." One of the first compilers of the day, Professor Dunglison, remarks: "There is a great diversity in the relative degree to which the local affection extends. Sometimes, the brain and stomach seem to be almost exclusively affected; in other cases, the spleen, intestines, and lungs, and, in others, the liver.

"Such are the main appearances met with in those who have died of remittent fever; but it is obvious they must differ almost *ad infinitum*. In a disease attended with so much irregularity of the functions of innervation and circulation, and implicating the general system, there is scarcely an organ, which may not give evidences of hyperæmia, if not of active inflammation." These I consider sensible and judicious remarks; but after expressing himself in this manner, the professor is incompatible with himself in the following, which I take from his work on the practice of medicine. I allude here par-

ticularly to the "distinctive differences." But to the extract: "Where such numerous opportunities exist annually, in the southern and western portions of this country, for investigating the anatomical characters of our remittent fevers, it is to be regretted, that they are so rarely embraced. A fine field is afforded for the enterprising pathologist; and we doubt not that, if it were cultivated, distinctive differences, analogous, perhaps, to those pointed out by Dr. Stewardson, might be discovered, which would shed light on the pathological characters or accompaniments of this interesting malady." And here, I would ask, what were the pathological conditions found by Dr. Stewardson? Was it any one distinctive pathological condition uniformly? and did this consist in the "bronze" color of the liver? If I mistake not, Dr. Stewardson found pathological lesions in several parts or organs. According to Professor Dunglison, he found "lesions of the spleen and liver in every case, and development of the glands of Brunner in the duodenum; and he considers, that their frequent enlargement and uniform distinctness, constitute a striking peculiarity of the disease: the stomach likewise was very frequently inflamed. In the cases observed by him, the essential anatomical characteristic of the disease appeared to be the morbid condition of the liver, which was found to be flabby, of a bronze color—the two substances blended together so as to be scarcely distinguishable; the spleen was much enlarged and softened." Dr. Stewardson also says: "In most of the cases, the liver is described as being of the color of bronze, or a mixture of bronze and olive; in one, as a dull lead color externally, internally bronzed with a reddish shade; in another, as between a brown and an olive, the latter predominating; and finally, as a pale, slightly greenish lead color, with a tinge of brown in one instance." Dr. Gerhard examined two

cases in the Pennsylvania Hospital in 1834; and Dr. Stewardson seven, in 1838, '39, and '40; and the appearances, on post-mortem examinations, seem to have been analogous. It appears that the substance of the liver was generally somewhat softened. In all the cases examined by these two gentlemen, the spleen was softened and enlarged, and generally to a great degree. "In one of Dr. Gerhard's cases it was of a dark blue color; in the other it was very black, and of a pulpy consistence. In three of Dr. Stewardson's cases, where the measurements are given, it was about seven inches long, by from four to five broad; and in three others, the lowest degree of enlargement is stated at from four to five times its natural size. The softening also was great, amounting generally to pulpiness, and, as the color was dark, the aspect of the organ was frequently very much that of a sack containing clotted, venous blood. The mesenteric glands are free from disease."\* Professor Bartlett says, "The mucous membrane of the stomach is very generally, if not always, more or less changed from a healthy condition in remittent fever. In five of six cases, where it was particularly examined by Dr. Stewardson, evident traces of previous inflammation were present. These traces consisted of mammelonation, and changes in the thickness, consistence, and color of the membrane, variously combined in different cases. Similar appearances were found in the two cases described by Dr. Gerhard.

"The mucous membrane, both of the small and large intestines, is generally free from any considerable alteration, only such accidental lesions being found as are common after death in most acute diseases. The ellipti-

\* See Professor Elisha Bartlett's work on Typhoid and Typhus Fevers; or the Amer. Journ. Med. Sci., April 1841.

cal plates have been found uniformly healthy. It is worthy of remark, that in all the six cases examined by Dr. Stewardson, in which the duodenum was particularly noticed, the mucous follicles, or glands of Brunner, were very distinct and prominent." Professor Bartlett also remarks, that, "Of the organs contained within the cavity of the chest, \* \* they seem very rarely to be the seat of any considerable lesion, in remittent fever," and that "neither the brain nor its membranes have been found to be the seat of any peculiar or constant lesion." Dr. Power, of Baltimore, on the post-mortem examination of three cases, corroborates the observations of Dr. Stewardson. Dr. Moses, of New York, examined one case which corroborates the above. Dr. Richardson reports some cases that occurred in the New York Hospital, in which there were enlargement, and, in some instances, ulceration of *Peyer's glands*. This is at variance with the remark of Professor Bartlett, above noticed, in alluding to the cases examined by Dr. Stewardson. A question might arise here as to what relationship there is between this form of remittent fever, or rather this complication, and typhoid fever. It is said that follicular gastro-enteritis is notoriously of common occurrence in the bilious remittent fevers of New York.

More recently, the post-mortem examinations of Drs. Anderson and Frick, in the Baltimore Almshouse and Infirmary, revealed the following:—

"*Brain*.—This organ was examined in seven out of the ten cases, and in *all* of them, either its membranes or its substance was injected, and in two of them there was moderate effusion in the cavity of the arachnoid.

"*Lungs*.—In one-half of the cases, the lungs are described as healthy, and in the other half there was more or less intense redness of the bronchia, and, in one case, of the larynx. But this condition does not seem to have

been accompanied with cough during life, and its inflammatory nature may, therefore, well be doubted.

“*Heart.*—The heart was examined in nine cases, and in *all* of them, its muscular tissue was found to be more or less *softened*. The only one in which this condition was not remarkable, also presented large fibrinous concretions in both ventricles. The patient had been ‘very delirious,’ and some portions of his pia mater were found ‘infiltrated with a turbid, milky serum.’

“*Stomach and Intestines.*—The stomach generally contained from two to four ounces of a dirty yellow fluid. The mucous membrane was found to be injected in seven out of the nine cases, in which it was examined, and in three of them intensely so. In five cases it was softened near the cardiac extremity, and in four near the pylorus, where also it was for the most part grayish, thickened and mammelated. In every instance, Brunner’s glands were unusually developed, and in three cases to a remarkable degree. The glands of Peyer were constantly healthy, but generally visible.

“*Spleen.*—In *all* the cases, without exception, the spleen was very much enlarged, being from two to six times larger than natural. In one instance, it weighed three pounds. In nine out of ten cases, it was very soft or puffy, and of a bluish black color.

“*Liver.*—The size of the liver was noted in nine cases, in all of which it was unnaturally large. Its consistence was very much diminished in ten cases, in eight of which the right lobe was the principal seat of the alteration; in one the left lobe was chiefly affected, and in the remaining one the whole organ was softened. In *all*, the color of the liver was either bronzed, or like that of slate; the surface of a section was polished, or shining; and in every instance but one the different colors of its component parts could not be distinguished. In seven out of

eight cases, in which the state of the *gall-bladder* was recorded, this receptacle was *distended* with thick, grumous bile, resembling molasses. In the eight cases, it was moderately distended with straw-colored bile.

“From this summary we may now conclude that the cases of remittent fever under examination presented the following lesions uniformly; to wit: 1st. Congestion of the brain; 2d. Softening of the heart; 3d. Softening of the mucous membrane of the stomach; 4th. Softening of the spleen, with enlargement; 5th. Softening of the liver, with enlargement, and a bronzed or slate-like hue of that organ, and distension of the gall-bladder, with inspissated bile.” The 11th and 12th cases are not included in this summary, “the one appearing to be a case of pneumonia, occurring some time after an attack of intermittent, or possibly remittent fever, and the other a case of dysentery, coming on during convalescence from remittent fever.”

“Of all these morbid alterations, the only one peculiar to remittent fever is that of the liver, which was for the first time pointed out, and so well described, by Dr. Stewardson, and which the present series of cases, taken along with those previously observed by himself and by Dr. Swett, justifies him in regarding as the *anatomical characteristic* of the disease. But it does not stand alone. The spleen, the stomach, the heart, and the brain, are all diseased; and, what is still more remarkable, they, with the liver, have one lesion in common, viz., softening. The hepatic alteration is evidently not that to which the symptoms of remittent fever can be referred as a cause. Our knowledge of the phenomena attending inflammation of the liver on the one hand, and of the close analogy existing between remittent fever and intermittent fever (in which the liver is unchanged) on the other, forbids such a supposition. The bronzed and slaty hues of this

organ are pretty certainly due to the congestion of its biliary ducts with bile, and of its veins with blood, so that its softening only remains to be studied, as well in its origin as in its effects. But this softening, as already remarked, is common to it and to several other organs. The question is therefore enlarged, and we have next to inquire to what ought the diminished consistence of these several organs to be attributed? Here are two parenchymatous structures (the liver and spleen), a mucous membrane (of the stomach), and a muscle (the heart), softened in the same disease. It will not be pretended that the change is due to inflammation; for the symptoms of this condition, as it occurs in the several organs, are wanting. Is it owing to a cause like that which produces softening in typhus fever, and in all diseases of a typhoid type? In one word, is it due to an alteration of the blood?"\*

While writing on the subject of the *pathology* and *post-mortem* examinations of remittent fever, I inadvertently neglected to refer to the facts and remarks of Dr. Boling, in relation to post-mortem appearances, which I consider worth more to the practitioner than all others heretofore made on this subject, and though the extract is long, I consider it worthy of being inserted entire.† It is as follows:—

*"Post-mortem appearances.*—There is some probability that these differ a good deal in different seasons, and in different localities, as considerable diversity exists in the descriptions of authors.

"In regard to the lungs, heart, kidneys, and bladder, there is nothing at all in the post-mortem appearances at all characteristic or peculiar. These organs, as in all other acute diseases, may all be at times the seats of accidental complications, and when so, of course give post-

\* Alfred Stillé, M. D., Amer. Journ. Med. Sci., April, 1846.

† This extract was assigned a place here, after this chapter on remittent fever had been written.

mortem evidences of the same. The same may be said measurably of the brain, which, although at times affected with inflammation and congestion, and presenting the post-mortem evidences of these conditions, is nevertheless frequently found in an entirely healthy state. In all the cases of the comatose remittent that I have examined, great congestion of the brain and membranes has been present. In that shade of the comatose remittent last described, I should not expect to find these conditions present. But I have never examined a case, none of the kind having ever proved fatal in my practice.

“The *stomach* I have invariably found presenting decided traces of recent inflammation, and there is no other organ in regard to the post-mortem appearances of which authors have been so unanimous. We are told by Pringle, that Thomas Bartholinus, on finding *the stomach and duodenum always inflamed and mortified*, in a malignant remittent fever that prevailed in Copenhagen in 1652, *assigned these parts as the principal seat of all malignant fevers*.

“The *intestines* also present frequent marks of inflammation, though not so universally as the stomach. The duodenum most generally suffer from a continuation of disease from the stomach, and the mucous follicles or glands of Brunner of this part, as first noticed in this disease by Dr. Stewardson, will generally, though not invariably, be found enlarged. The jejunum is, perhaps, less frequently diseased than any other part of the intestinal canal, though occasionally it will be found to contain patches of ramiform and capilliform injection. The ilium, more frequently than any portion of the intestinal canal, the stomach, and, perhaps, duodenum alone excepted, presents traces of inflammation, in all cases increasing in intensity as we approach the ileo-cæcal valve. The glands of Peyer, to which attention has

been more particularly directed of late, in consequence of their diseased condition being considered the anatomical characteristic of typhoid fever, have, by different observers, been found in different conditions. They are stated by Dr. Bartlett to 'have been found uniformly healthy.' He has here reference merely, however, to cases examined by Dr. Gerhard and Dr. Stewardson, in the Pennsylvania Hospital at different times. In September, 1843, I examined a case of remittent fever, an originally mild one, but which, by neglect and mismanagement, was permitted to assume a grave form. The case was unusually protracted, commencing August 7th, and terminating fatally on the 17th of September. In my notes of the post-mortem examination, which was made three hours after death, it is stated that 'the small intestines presented slight traces of inflammation throughout nearly their whole extent, increasing in intensity in descending to the ileo-cæcal valve. The elliptic plates were of a much darker color than the rest of the mucous membrane, granular to the eye and touch, the margins well-defined and slightly elevated, and some of them presenting distinct traces of ulceration. These characters were more distinct just above the ileo-cæcal valve, and were gradually lost in ascending the intestine. Mesenteric glands slightly enlarged.' In another case, of a negro girl, terminating fatally on the ninth day, August, 1844, examination five hours after death, it is stated, that there was 'considerable inflammation of the small intestines; elliptic plates of ilium elevated, granular to the touch, and darker than the rest of the canal. Solitary glands much enlarged, many of them ulcerated; the margins hard, and the edges of the ulcers abrupt; the ulceration in some places extending through all but the peritoneal coat. Mesenteric glands a good deal enlarged.' In this last case diarrhoea existed, in the former not.

These are the only instances in which I have observed any morbid alteration of the elliptic plates. They are, however, almost the only cases terminating fatally at so late a period, that I have been permitted to examine. The result of these has induced me to think it probable, that in many protracted cases some alteration of the glands of Peyer and Brunner will be found, and at an earlier period in those which have been attended with diarrhoea.

“The *spleen* is, in a majority of cases, found enlarged, dark, and somewhat softened; and, occasionally, this alteration is so great that the interior of the organ resembles a mass of black, clotted blood, contained in a coarse, cellular mesh; and so pulpy as readily to yield to but the slightest pressure. This alteration of the spleen is, however, more a consequence of what may be called the latent action of malaria, than a necessary accompaniment of remittent fever; as, in no instance, have I ever found enlargement of the organ during life, or any morbid appearance after death, in a first attack of remittent fever, in a person who had not previously resided some considerable time in a malarious region. In all cases, however, where any enlargement exists prior to the attack, a considerable augmentation almost invariably takes place before the patient dies. In almost every case, perhaps every one, where any enlargement of the spleen is present during an attack of remittent fever, or after death from the same, on inquiry we may be satisfied of its having existed prior to the attack.

“The *liver* is the organ to which, from his preparatory instruction, the young physician, commencing practice in the South, will at first have his attention more especially directed, and will be governed much in the application of his remedial agents by its morbid or supposed morbid condition. A few authors speak of having found it but slightly altered, but by a large number of those whose

authority has been most influential, we are led to expect manifest and palpable changes. In the one case which seems to have determined Dr. James Johnson, in the rejection of the Peruvian bark as a principal agent, and to have decided him in regard to his subsequent practice, blood-letting, and calomel, the liver was found 'so gorged, as it were, with blood, that it actually fell to pieces on handling it.' Although we are not taught, in all cases, to expect to find the alteration so extreme as in this instance, yet, in a less marked degree, this is the character of what we are taught to expect in almost all. I had so strongly made up my mind in regard to the existence of this state of the liver, in the commencement of my practice, that it was a matter of great surprise to me *never* to find well-marked fullness or tenderness of the right hypochondriac region. This surprise was far exceeded, however, by that which I felt on finding no traces of engorgement of the liver present, in my first post-mortem examination. I looked upon this case, however, as an exception; but all my future examinations revealed the same state of things.

"In no case, that I have ever treated, have I found, during life, any evidence of affection of the liver more than that functional derangement partaken by it in common with every other organ during the state of febrile excitement; and I will venture to say that, in nearly every case, this functional disorder will be as palpable and as well marked in the kidneys as in the liver. I will also remark, *en passant*, that, in a practice of nine years in the South, I have never had under treatment one single case of well-marked and unequivocal hepatitis, acute or chronic.

"Disappointed in not finding the changes in the liver which I had been led to expect, and the morbid alterations, if any, being so different from what others had

described, and less easy of appreciation, *particularly to one not accustomed to frequent post-mortem examinations*, I was led to believe that lesions of this organ were less frequently found after death than of almost any other.

“In an article published by Dr. Stewardson, in the *American Journal of Medical Sciences* for April, 1841, in which, among certain other post-mortem appearances, which he is disposed to think somewhat peculiar to remittent fever, he describes an appearance of the liver not heretofore particularly noticed, and, from the result of a good many examinations, arrives at the conclusion, that it is probably ‘the anatomical characteristic of that disease.’ This alteration is described as consisting, in most cases, in a flabby state of the organ, the color externally being of a bronze, or a mixture of bronze and olive, and internally of an olive, with an entire extinction of the natural reddish-brown. It appears to have been generally of the natural size, and ‘the two substances so blended as to be scarcely distinguishable.’ The appearances described by Dr. Stewardson have since been found by others, and are particularly noticed by Dr. Swett, in the *American Journal of Medical Sciences* for January, 1845. I have given above what, on a pretty close examination of Dr. Stewardson’s cases, seems to me to have been the appearance of a large number of them, but still the description of the ‘*anatomical characteristic*,’ as given by himself, differs materially from this in some of the others. For instance, we have one described as being ‘of a pale, slightly greenish lead color,’ one ‘of a dull bronze,’ and in another, the ‘surface of a dull lead color.’ In the cases of Dr. Swett there is also found this diversity of appearance in the color of the liver. One case ‘presented externally a slate color, which, when placed in a proper light, gave a bronze tint.’ Another was of ‘a pale slate

color, and in many parts a bronze tint was perceptible,' and another 'externally was of a bronzed appearance.'

"On the appearance of the above article of Dr. Stewardson, my attention was again directed to the liver, but I have been able in but a very few instances to find any alteration; and even where such did exist, a slight exertion of the imagination would have, perhaps, been necessary to trace a close resemblance between them and the descriptions of Dr. Stewardson. Indeed, in a large proportion of cases, the organ, so far as I am capable of judging, was entirely healthy. Where it was otherwise, the *concave* surface of the organ was of what appeared to me an uniformly bluish-slate color, extending to about the depth of a quarter of an inch; the line of demarkation between this, and that portion which presented a natural appearance, being well defined. In every case in which I have observed this appearance, with one exception, it was confined to the concave surface, the convex surface and the interior being entirely healthy. The exception was in a case which, in the beginning, presented the symptoms of what is generally denominated verminous or infantile remittent fever. In its progress peritonitis supervened, and the patient died about the beginning of the fourth week. On a post-mortem examination, a considerable quantity of serum and coagulable lymph was found in the abdomen, and *both* surfaces of the liver were found uniformly of the color above alluded to, the interior of the organ being apparently healthy. This appearance of the liver I have observed in an equal proportion of cases, I think, in the post-mortem examinations of patients dying from other diseases; though I have no recollection at this time of having observed it in any case, in which the patient had not labored under an attack of remittent or intermittent fever, within a month or six

weeks previous to the commencement of the disease causing death.

“In conclusion, I would observe, that all my remarks in regard to the symptoms, treatment, and post-mortem appearances of remittent fever, are made with reference to the disease as it prevails here in Montgomery, and in its immediate vicinity, for, as I have before observed, these may all vary in different localities.”

*The Blood.*—Dr. Stewardson suggests “that an altered condition of the blood, combined, perhaps, with some softening of the tissue of the lungs, may have given rise to an effusion of bloody serum, noticed by him; he also notices the flabbiness of the heart, in some instances, and the absence of firm, fibrinous coagula in all, and remarks that it is perfectly evident that the blood, in this disease, is the seat of morbid changes which deserve attention; and, again, that to the state of this fluid we must no doubt look, in part, for an explanation of the fatal termination in some cases.” Professor Dunglison remarks, that, “As in other febrile and inflammatory diseases, the blood becomes modified in its character; and the view has been maintained, that remittents originate in a disorganized state of this fluid, as indicated by its black crimson color, which Dr. Stephens considers to be owing to the entire removal; or great diminution, of its saline ingredients. This altered condition of the blood, he thinks, induces a morbid modification of the action of the solids as certainly as fever is induced by the injection of a putrid and poisonous fluid directly into the blood-vessels. The altered condition of the blood cannot be contested; but it may admit of question, whether it ought to be regarded as the first link in the chain of phenomena.” The result of the analyses of the blood by Dr. Charles Frick, is at variance with the opinions of Dr. Stephens. The reader will please refer to the first five cases in the table at page

66, or the *American Journal of the Medical Sciences*, January, 1848, page 30.

In post-mortem examinations, pathologists have been too exclusively seeking to find some uniform local lesion, as characteristic or pathognomonic of remittent fever, and other diseases, to the neglect of the altered condition of the blood. Microscopic examinations and chemical analyses might be of much service in this department; and be really of vastly more importance than the disposition of some to concentrate the mind towards the morbid condition, or bronze color, of the liver. The morbid condition of the nervous system, both prior to and after death, is also too much overlooked, especially by our hyperborean brothers, and also by many in the South. Though many of the southern practitioners look to the implication or morbid affection of the nervous system during life, they also manifest too much apathy with regard to its pathological lesions in the dead subject. The want of success heretofore attending the search after pathological conditions of the nervous system after death, no doubt, deters many from venturing in this field of pathological research.

I consider it a curse, rather than a blessing, that this "bronze" color of the liver has attracted attention in the last few years. Just as the profession is about emerging from an erroneous theory, and corresponding improper treatment, it is to be feared that this concentration of attention towards the liver will tend to perpetuate the injudicious and indiscriminate use of calomel and blue mass. At present, it would indeed seem, that, while southern practitioners are eminently successful in the treatment of remittent fever, our northern brethren are plodding along after the "*bronze color of the liver*," relying or expecting much from their *numerical statistics*. But, after all, what therapeutic indication does the bronze,

olive, or slate color of the liver furnish to practitioners? If it should be found to exist in every fatal case of remittent fever, and in no other disease, it might be considered as characteristic of this disease (and I suppose that the most ardent "*bronze liver*" hunters and advocates claim nothing more; but even this might be of interest in a medico-legal point of view, though rarely), and also contribute to feed the inclinations of those who manifest a sort of pride in necroscopic searches, which are too often erroneous, or lead to wrong conclusions, in accordance with preconceived opinions. I wish it to be understood, that I do not object to post-mortem examinations—far from it; as by these investigations, if properly directed, much light is thrown on the subject of medicine. But I do not know that the bronze color of the liver has, or ever will offer any therapeutic indication whatever. In typhoid fever, the affection of Peyer's glands and the lower portion of the ileum, furnish very important therapeutic indications. But it may be said that this uniform color of the liver may be of importance in diagnosis—in establishing a characteristic difference in remittent, from typhoid, typhus, and other fevers. In the cases that we have noticed, examined by Dr. Stewardson and others, the liver, however, was not uniformly of the same color. Though Dr. Stewardson, in most cases, observed a bronze or olive color of the liver, or a mixture of these, yet, in others, he speaks of "a pale, slightly greenish lead color, with a tinge of brown in one instance." In those examined by Drs. Anderson and Frick, "In *all*, the color of the liver was either bronzed or like that of slate; the surface of a section was polished and shining; and, in every instance but one, the different colors of its component parts could not be distinguished." So we see that there is not uniformity in the color of the liver—not even in all the cases examined by Dr. Stewardson himself.

But, having already extended these remarks beyond what was intended, in relation to this matter, which should scarcely attract the attention of physicians, I will leave the further analysis of these cases to those who feel more interested in them; being strongly inclined, for my own part, from the very nature of remittent fever, to believe it probable that this *bronze liver notion will have its day* (like Broussais' *gastro-enterite*, and other popular notions), and be regarded by subsequent generations as a relic, or prejudice, resulting from the misguided attention or ignorance of the present age. But, before quitting this subject, I must be permitted to remark, that this concentration of attention to the liver has a bad effect in several ways. First, by inducing neglect of the most important considerations—the condition of the nervous system, and the blood, both prior to and after death. And, secondly, it is to be very much feared that it will perpetuate the too free and indiscriminate use of mercurial preparations. But, after these already protracted remarks, I must dismiss this part of the subject, and proceed to what I consider of vastly more importance, namely, the

#### TREATMENT OF REMITTENT FEVER.

1. TREATMENT OF THE SIMPLE OR MILD FORM.—Ordinarily, this form of remittent fever is very easily managed or controlled, especially if the treatment be commenced soon after the attack. When called to a case of this kind, I usually give, at first, a dose composed of

Quinine four to six or eight grains;  
 Calomel eight to ten or twelve grains;  
 Rhubarb eight to ten or fifteen grains.

To which I frequently add, if the stomach is not irrita-

ble, two grains of ipecacuanha; if irritable, or a disposition to nausea, in place of the ipecacuanha, add about one-third of a grain of morphine; or, if not, and the skin is hot and dry, both the ipecacuanha and the morphine may be added. In those cases, too, in which the skin is hot and dry, ten grains of jalap may be added in place of the rhubarb, as the former is a much better diaphoretic. Some four or five hours after this, the quinine should be repeated, combined with four or five grains of jalap, to which two grains of ipecacuanha may be added, if the stomach is not irritable, or, if it is, the morphine may again be added. After this, give the quinine every four; five, or six hours, according to its influence, with the addition of the ipecacuanha; provided there is no gastric irritability, or a teaspoonful of the tincture of lobelia may be added in place of the ipecacuanha. This plan generally soon produces warm diaphoresis and manifest improvement in the condition of the patient, and convalescence is soon brought about. After twenty-four or thirty-six hours from the exhibition of the first dose of medicine, I sometimes repeat a similar one, if the morbid condition has not yielded considerably. When the disease seems readily to yield, for this dose, in place of the calomel, I add rhubarb, rhubarb and extract of dandelion (*taraxacum*), or extract of the white walnut, just sufficient in amount to produce a mild aperient effect. After this, one or two discharges from the bowels a day are sufficient. Active purging should be avoided. If the quinine should have a tendency to produce irritation of the bowels and too frequent watery discharges, a teaspoonful of paregoric, or a little laudanum (twenty or thirty drops), should be combined with a dose of it, or given alone, so as to control this condition. If there is much febrile excitement, and twelve or twenty-four hours have elapsed

since the exhibition of the first dose, a ten-grain dose of calomel may be added.

If the patient is thirsty, he should frequently be allowed to drink small quantities of cold water, or he ought to eat small quantities of ice, oft repeated. If his skin is hot and dry, he should occasionally be sponged all over with cool or cold water. If there is determination to the head, with headache, cold water should be freely and frequently poured over the head and back of the neck of the patient till relief is obtained. If there is much restlessness, with hot, dry skin, sponging the body with cool or cold water, cold or iced water to drink, opiates, and quinine, are the remedies for this condition. By this means, the hot, dry skin is soon cooled and covered with a moderately free perspiration, the restlessness and oppression are soon relieved, and the patient feels calm and composed, and, perhaps, drops into a pleasant and comfortable sleep, and the fever, almost invariably, immediately arrested.

It is rarely necessary to resort to venesection in this mild form. If, however, there should be considerable febrile excitement, with determination to any important organ, it may be necessary to draw a moderate quantity of blood, especially if these conditions are not easily controlled by the means already noticed, or danger is apprehended from delay; and more particularly if the patient is of a full habit or sanguine temperament. As irritability of the stomach is not often a troublesome attendant in this form, I will defer its further treatment till I come to speak of the second form, or *causus*.

The apartment of the patient should be well ventilated, and made agreeable to him.

2. TREATMENT OF THE SECOND FORM, THE CAUSUS.—This form, it would appear, of late years, is most com-

mon in the middle and more northern portions of this country, with exceptions now and then in some southern localities. It is said to be common in the city of Charleston, after individuals go out into the malarious or neighboring swampy regions, and return to the city. Within the last eight or ten years the *causus* appears to have been less frequent than formerly, and pretty much supplanted by the *causodes* and other forms of malarious fevers, in the south and south-western States. And here I will remark, that I do not know that we should consider the *causodes* as a less dangerous form than the *causus*, but that it is apparently less intense, the febrile and inflammatory excitement not being so high; yet the nervous system appears to be more profoundly implicated, more depressed, with less power of reaction. In the States of Tennessee and Kentucky, and, perhaps, in other places, it appears that the *causus*, in the last few years, has partly been supplanted by typhoid fever; frequently and improperly called *typhus fever*, in some localities.

When a well-marked case of the *causus* occurs in the south and south-western States, it is most apt to be among those of vigorous or sanguine temperament. Hence, also, the greater liability of those who have recently arrived from the North. It seems quite clear that its more frequent occurrence in the South, many years ago, may, in a considerable degree, be accounted for by the emigration from the more northern portions of the world; as new emigrants from the North are now more liable to it than the resident citizens; and this explanation will apply to the liability, heretofore, of the British troops stationed in intertropical regions. Dr. Cartwright gives an account of this form of remittent fever, which prevailed in an epidemic manner, in Monroe county, Mississippi, in 1822. "The disease was generally ushered in by a distinct chill, which was speedily followed by intense

heat, thirst, and headache, and very severe pains in the loins. The anxiety and difficulty of breathing, the deadly sickness, sense of weight, heaviness, and pain in the stomach, increased as the fever approached its acme, until the suffering became intolerable. The exacerbations generally occurred in the evening, and a considerable remission, amounting in some cases to a perfect intermission, took place on the ensuing morning. On the evening of the second day a sudden and unexpected paroxysm, more violent than the first one, came on, which was attended with a most horrid sensation of pain and oppression of the stomach, accompanied with deadly sickness and continued vomiting, but with the ejection of very little fluid of any kind. The bowels, during the first and second paroxysms, were always in a state of obstinate constipation. About noon, the third day, the third paroxysm generally came on," &c. &c. It is well known, that, at this time, Monroe county was a newly settled region of country, the emigrants being principally from a more northern region of country.

If one who is taken with the causus be seen within one, two, or three days from the time of attack, and if the reaction is very great, with determinations to important organs, it will generally be advisable to take blood from the arm to the extent of from twelve to twenty-four ounces (from three gills to a pint and a half), according to the temperament and vigor of the patient, and the violence of the disease. After the second or third day, however, it should be practiced, if at all, with great caution—seldom being safe to resort to it after this period. If there should be still considerable arterial excitement, full, hard pulse, hyperæmia, or determination to some important organ, it may still be of service, guided by judgment and caution, lest prostration be induced. Venesection, in the early stages, has not only a tendency to lessen

the febrile excitement, but also to relieve the great gastric distress, nausea, vomiting, and irritability of the stomach, which, in many cases, is very troublesome and obstinate.

In the *causodes*, venesection is seldom advisable; and, when resorted to, should be practiced with judgment and sufficient caution, especially after the first two days from the time of attack. Indeed, blood-letting may generally be dispensed with in this form or modification of remittent fever.

In the *causus*, soon after the venesection, or if the excitement has not been sufficiently great to demand a resort to this means, I commonly give a dose composed of

|                    |                                 |
|--------------------|---------------------------------|
| R. Sulph. morphine | one-third to one-half a grain ; |
| Sulph. quinine     | eight to twelve grains ;        |
| Calomel            | eight to thirty grains ;        |
| Rhubarb, or jalap  | ten to twelve grains.           |

If there is no gastric irritability, add two grains of ipecac., or a teaspoonful of tincture of lobelia. If the stomach is very irritable, with much nausea, and if there should be great febrile excitement, hot, dry skin, &c., venesection will go far towards allaying it; and, soon after the blood-letting, or, if it is not thought necessary to resort to it, give from a third to half a grain of morphine, some half an hour or an hour before the above dose of medicine is given; and, in the mean time, the patient should frequently eat small quantities of ice, which is one of the best means for allaying the irritability and nausea of the stomach, and of controlling vomiting. Pouring cold water over the head and neck, and over the whole body, if it is hot and dry, has also a good influence; not only in controlling the irritability of the stomach, but in controlling the fever, oppression, and distress

of the patient. A piece of flannel, folded and dipped in a warm mixture of laudanum, brandy, and water, is also an excellent remedy for controlling irritability of the stomach. A cataplasm of peppermint and warm brandy, or mustard, applied in the same way over the region of the stomach, may be used for the same purpose. If the first dose of medicine should be thrown up, endeavor to control the irritability by the above means; and when this is effected repeat the dose, leaving out the morphine, if it has been given before; or a sixty-grain dose of calomel, either alone or combined with the morphine, may suffice to control this irritability, and also supersede the exhibition, for a time, of the first dose recommended above. If this be the case, the patient should continue to use the ice, or very cold water, which may also be poured over the head and neck, or, if necessary, over the whole person. In two or three hours, a ten-grain dose of quinine should usually be given, which acts as a sedative, controlling the fever, reducing the frequency of the pulse, and rendering it more soft, and also bringing on warm diaphoresis. In four or five hours, the quinine, with six grains of jalap or a little rhubarb, and, if it is thought the stomach will bear it, the addition of two grains of ipecac. or a teaspoonful of the tincture of lobelia may be given. This dose may be taken every four or five hours till the disease begins to yield, when the dose of quinine should be smaller, say from four to six grains, and the intervals made longer, according to the influence of the medicine, and the readiness with which the disease yields. About twelve or twenty-four hours after the exhibition of the first dose of medicine containing calomel it should be repeated, according to the severity of the disease and the influence of the previous dose, and the other means used for controlling the fever.

In all cases that are disposed to be obstinate, it may be necessary to repeat this dose the third time, observing about the same intervals before noticed—that is, twelve or twenty-four hours—and it will generally be advisable to make the second and third doses of calomel smaller than the first, say six to twelve grains.

For the irritability of the stomach, some practitioners recommend lime water, given in sweet milk; others sugar of lead, in from three to five grain doses, camphor dissolved in ether, etc. etc. Dr. Wood speaks highly of a solution of the citrate of potassa. He says: "No preparation, with which we are acquainted, is equally efficacious in allaying irritability of stomach, and producing diaphoresis, in our remittent fevers. It is usually also grateful to the stomach." I prefer ice, if it can be obtained, or very cold water, and morphine, with the external use of cold water. Iced or cold water is one of the most powerful remedies in controlling the irritability of the stomach, allaying thirst, producing diaphoresis, and acting in concert with the other remedies to control the fever. This article is generally instinctively desired by the patient, and it is usually very grateful to him. If, however, too much be drank, it may subsequently distend the stomach, and produce nausea and vomiting; and, therefore, as more can be accomplished by a smaller bulk, ice should be preferred. The external application of cold water is too much neglected by practitioners. Indeed, except in the severest forms of the causus, the use of the lancet may be entirely superseded by the former. If there is much febrile excitement, with hot, dry skin, the patient should be stripped of his clothing, and either set over a tub, or laid on a blanket on the floor, and have cold water poured freely over him till the heat of the surface becomes cool, and the fullness and

redness of the skin is brought to a natural appearance, or even paler than natural; or if the patient should begin to complain of chilliness, he should be put to bed, and his feelings consulted with regard to the amount of covering. In cases of less violence, or in the causodes, sponging the whole person occasionally, while the skin is hot and dry, may suffice. This may be done three or four times a day, if found necessary from the continuance of the fever. To more particularly enforce the importance of the external application of cold water, I might quote a number of authors, but will let a few extracts from Dr. Dickson's work on the *Practice of Medicine* suffice. He says it is one of our most efficient febrifuges—"far above the lancet, both in the extent of its adaptation and in its degree of specific utility. All that we can hope or anticipate from bloodletting, may be obtained, in a majority of cases, by the use of the [cold] bath; while the latter possesses this striking and obvious advantage, that we can repeat it as often as the symptoms are renewed that require it." And further: "The particular indications, which demand the resort to it unhesitatingly, are found in the youth and general vigor of the patient, and the heat and dryness of the surface. The local determination, which it controls most promptly, is that to the brain, shown by headache, flushed face, red eyes, delirium, etc., with a full, hard, bounding pulse. Seat your patient in a convenient receptacle, and pour over his head and naked body, from some elevation, a large stream of cold water; continue this until he is pale, or his pulse loses its fullness, or his skin becomes corrugated and he shivers. On being dried, and replaced in bed, a general sense of comfort and refreshment will attest the benefits derived from the process, which, as I have said above, may be repeated whenever the symptoms are renewed, which it is so well adapted to remove.

“If the shock of this shower bath or cataract be too great, immersion, which many prefer, may be substituted. Few shrink from this, and almost every one will evince the high gratification and enjoyment derived from it. One of the pleasantest effects following the bath, is the complete relaxation of the surface, which it so often brings on, attended with a copious and salutary sweat. I need not warn you against the nearly obsolete practice of endeavoring to accelerate or increase this by wrapping in blankets, or shutting up the apartment, or warming it artificially. The patient is to be covered agreeably to his sense of comfort, and, though I would not place him in a current or draught of air, I would have his chamber fully and freely ventilated.

“Some have, strangely enough, imagined it to be necessary that evacuations of some kind should be premised to the application of the cold bath, but this is a worse than superfluous caution. It does positive harm, by postponing the remedy until the time of its most special adaptation and greatest utility is past—the earliest and forming stage of the febrile attack. It is here, I repeat, that you will find it most admirably beneficial. Yet you will meet with frequent occasion to advise its repetition at intervals throughout the whole progress of the disease; and even when the patient can no longer bear either affusion or immersion, he will often be relieved and gratified by washing and sponging him, especially over the hands, arms, breast, feet, and legs. In the very latest stages of our worst fevers, ablution in this way with ardent spirits, is found singularly refreshing.”

If the determination to the head is considerable, violent, or tenacious; indicated by headache, flushed face, red eyes, beating of the carotid arteries, in some cases delirium; the patient's head should be drawn over the

edge of the bed, and cold water from a pitcher or bucket freely and frequently poured over it, and over the back of his neck. This not only controls the cerebral determination, but is of great comfort, and soothing to the feelings of the patient. I would urge the importance of especial attention to these directions.

In the language of Dr. Dickson, the repetition of the external application of cold water "is forbidden, when it has occasioned a protracted chill or rigor, or the patient has continued to feel cold or uncomfortable from it."

When the skin is hot and dry, and the patient restless, the cold bath, as above recommended, is eminently grateful, soon producing composure; and perhaps he will fall into a pleasant and refreshing slumber, attended with general warm diaphoresis. But notwithstanding the great febrifuge virtues of this remedy, I believe a large majority of practitioners seldom resort to it; and there appears to be fear entertained against its internal or external use amongst the people generally, especially if calomel has been taken. I have often been under the necessity of endeavoring to remove this groundless fear. The cold bath should not be resorted to when the skin is covered with sweat, nor should it be used so freely internally when this is the case. If the patient is feeble, or much debilitated, and the skin hot and dry, pouring the cold water over the head and neck, and merely sponging the body as occasion requires, should be resorted to instead of immersion, or the cold dash to the whole person. In the *causodes*, the sponging will generally suffice. If the patient should be very much debilitated, very old, or when the skin is cool, or covered with sweat, the application of cold water should not be resorted to.

*Cathartics.*—At the commencement of the treatment, if the bowels are not already relaxed, it is advisable to

procure a few free evacuations, without purging violently, after which, keeping them gently relaxed (one or two operations a day) is sufficient. For this purpose, the extract of white walnut, the extract of dandelion and rhubarb, or the addition of a sufficient amount of rhubarb or jalap to the quinine, or other appropriate aperients, will suffice. Cream of tartar may also be used, being, too, a cooling and grateful drink when the patient is thirsty. Lemon juice, diluted with water, or a solution of the crystallized citric acid, is also well suited for this latter purpose; it is cooling, and produces perspiration. Solution or infusion of slippery elm, or gum Arabic, may also be used as a drink.

In the early stages of the disease, it is often necessary to use some tact in the exhibition of medicines, as the stomach sometimes rejects them. When this is the case, a second dose, given soon after the vomiting is over, will usually be retained. If, however, the irritability of the stomach is obstinate, the means previously recommended for this purpose should be resorted to, or a blister may be drawn over the region of the stomach, and dressed with half a grain to a grain of morphine.

*Calomel.*—I most decidedly protest against the exhibition of calomel every two, three, or four hours, as is recommended by authors, and usually put in practice by many, perhaps the large majority of physicians. Such a course as this usually prostrates the patient, and makes the disease more tenacious; and produces irritation and inflammation of the stomach and bowels. It should not be given oftener than has already been recommended, and its exhibition should usually be confined to the first few days of the disease. If, however, inflammation has attacked some important part, and is somewhat tenacious, a small dose of calomel (four or five grains) or blue mass may be given once in

twenty-four hours, till the local inflammation yields. If the patient is observed to get worse every day, or every other day, at a certain time of the day, the calomel should be given with a dose of quinine and morphine, or opium, about four hours before the commencement of the paroxysm, so that it will not cause the bowels to operate during the paroxysm.

*Salivation* should always be avoided. It may be necessary, in some cases, to give calomel or blue mass, so as to increase the saliva to the extent of keeping the mouth and tongue moist, and making the patient spit a little more than usual, especially in those cases in which local disease has been produced and is tenacious; but the mercurial influence should never be carried to the extent of making the mouth and tongue sore. Among the many useful instructions of Dr. Dickson, I am sorry to see that he and others are still under the misguided influence of preconceived opinions in relation to the liberal use of calomel. We might expect, however, that the older practitioners, who were taught many years ago, when calomel was *the* great remedy in all cases of fever, would still hold on to these old impressions with some tenacity; notwithstanding it is becoming almost obsolete, among the better informed and most successful practitioners in the South.

*Emetics* are usually unnecessary except, in some cases at the commencement of the disease, there should be undigested food in the stomach, bile, or other irritating matters; when this is the case, there are apt to be nausea, retching, or incomplete vomiting; to assist which, a teaspoonful of powdered ipecacuanha may be put into a teacupful of warm water, and one-third of it taken every ten or fifteen minutes till free vomiting is induced; warm water may be freely drunk to assist its operation. In a severe attack of the causus, tartar emetic may be given

with advantage, instead of the ipecacuanha; and during the stage of excitement, if the stomach will bear it, it may be of much service in controlling this, given in one-eighth grain doses every hour; or ipecacuanha may be given for the same purpose in two-grain doses every hour, or a grain or two of ipecacuanha, with a teaspoonful of tincture of lobelia, is well suited for the same purpose; so also is a combination of a solution of morphine with ipecacuanha or lobelia. During this stage, lemonade, a solution of cream of tartar, soda, or Seidlitz powders, are also grateful to the patient, and cool the fever and produce sweating. Usually, emetics should not be given when there is much tenderness or pain on pressure in the region of the stomach, as in such cases there is some danger of their setting up inflammation of the stomach and bowels, which will render the case more difficult to cure, and also make it more protracted. When those who are not physicians venture to give emetics, ipecacuanha should generally be the article selected for this purpose, as it may be given with greater impunity than tartar emetic or lobelia; and, even if it should not be thrown up, it will work off by the bowels without producing any deleterious effects. In mild attacks, a solution of common salt (*chloride of sodium*), or mustard, may be given, when necessary, as an emetic.

*Local Blood-letting*, I have very little confidence in, in this form of disease. Dr. Boling seems to adhere to it on account of preconceived opinions, but remarks: "For the relief of coma, delirium, and epigastric tenderness and oppression, I have used it much, but seldom with the effect of producing any marked and immediate relief."

As it may be thought strange by many, especially by those of the North, that quinine is given during the febrile excitement, and as there is a prejudice against its use

during this time by some, it may be well to remark, that when given, as heretofore recommended, in large doses, it has a *sedative* and *soothing effect*, reducing the frequency and hardness of the pulse, and producing a general warm diaphoresis. If it is given in doses of two or three grains, and not properly combined with other medicines to control its influence, it may add to the intensity of the disease—acting as an excitant or stimulant, when given in this way. Quinine more prominently manifests its favorable influence during the stage of remission, than during the stage of excitement; and some are in the habit of giving it in large and frequently repeated doses during this time, so as to avert the ensuing anticipated stage of excitement. In many cases this may suffice, but in cases attended with much danger, or determination to important organs, valuable time may be lost in waiting for a remission; therefore, usually, the better plan is to give it as heretofore advised. When it causes roaring in the head, or buzzing in the ears, the intervals between the times of its exhibition should be made longer (waiting for these effects in a great measure or entirely to subside), and the dose diminished, if large ones have been given. Dr. Boling, of Montgomery, Alabama, to whose interesting paper on the subject of remittent fever, in the *American Journal of the Medical Sciences*, 1846, I would refer the reader, says, that “*Quinine* is decidedly the most important and generally useful therapeutic agent in the treatment of the various forms of remittent fever.” In corroboration of the above directions, and for further suggestions or instructions, I will take the liberty to extract a few more remarks from Dr. Boling’s communication.

“The impression still exists, even with many of those who venture on the use of quinine in remittent fever, that it is only during the remissions that it should be

given, and that mischief must certainly be the result of its administration during the exacerbation. So far is this from being true, that there is nothing with which we can more effectually aid in cutting short an exacerbation than the quinine itself, commenced and administered freely during that time. In most of the cases to which I have alluded, in which I had a suspicion of certain unpleasant symptoms being produced by the quinine, either the remedy had been administered at so late a period of the remission, or the exacerbation had anticipated so much, that its first effect upon the system generally was felt just at the height of the exacerbation. But in those cases, and they were few, in which unpleasant effects even seemed to be produced by it, it rarely failed to diminish the length of the exacerbation. Undoubtedly the action of the quinine is, in most cases, more favorable during the remissions than during the exacerbations. Less of the remedy will be required to produce its peculiar effect, and this may more promptly be brought about. But is it alone in this respect? Is it not the same with almost every article of the *materia medica*? Who ever saw a cathartic act as mildly and as efficiently, during an exacerbation of fever, as during the state of remission." And again :—

“Great mischief has been, and is still the consequence, of this impression, that a preparatory treatment, a reduction of the force and violence of the disease, is necessary for the administration of quinine. Many cases, originally mild, under this course of preparation, go on getting worse and worse, and further and further from the supposed fitting standard, with each succeeding exacerbation—while other cases become totally irremediable by any course of treatment after a few exacerbations—and cases, too, that might have been promptly arrested by quinine at the termination of the first or second exacer-

bation. It is only the originally less severe cases that will bear a long continuance of any system of treatment in which quinine is not a principal remedy. Whenever a *protracted* case, presenting violent symptoms, is met with, the probability is ten to one that it was originally a mild case, treated with drastic purgatives, perhaps blood-letting and diaphoretics—and entirely without quinine. Cases originally violent, almost invariably die while *preparing* for the quinine, and those of moderate severity become worse under this *preparation*; perhaps so reduced in flesh and strength, that all depletive treatment has necessarily to be suspended, without any abatement whatever, almost invariably, indeed, with an augmentation of the febrile symptoms. These may be subsided slowly *after the suspension of treatment*, or sometimes, although the fever may not be subdued, the quinine is ventured upon *in consequence of the debility*, and seems to prove powerfully *tonic*, by immediately arresting the progress of the febrile paroxysms, and thus *permitting* the healthy exercise of the organs of digestion.

“Whatever the type or character of the fever, wherever there is reason to apprehend danger, no time should be lost in bringing the system decidedly under its influence. Where the remission is well marked, and of some continuance, I generally prefer this period for its commencement, probably now from habit, more than anything else. Where the remissions are short, or when the case is urgent, and there is reason to apprehend a fatal termination in the next exacerbation, or where the disease is of so violent a character as to justify fears of the occurrence of any serious organic lesion, or a considerable aggravation of any that may already exist, it seems to me preferable to commence with it immediately, and this I generally do, without regard to the stage of the pa-

roxysm. The fact, that the exacerbations frequently anticipate, or come on at irregular and unexpected periods, and that, too, most frequently in cases of such violence as to require decided and prompt measures for their successful management, is another reason for the immediate administration of the quinine. Two portions, of from eight to sixteen grains each, according to the urgency of the symptoms, given within a couple of hours of each other, will most generally bring the patient under its influence two or three hours after the administration of the second portion. Where the case is of a very violent character, and but a short period is allowed the physician to act, before the time of the expected exacerbation, the whole of the above amount may be given at one time. Wherever the physician arrives during the height of the exacerbation, when the case is one of great severity, the remedy should be immediately administered in full and decided doses, for the purpose of preventing mischief during the existing exacerbation, by at once bringing the arterial system under its sedative action.

“The system once fully under the influence of the medicine, about eight grains every third or fourth hour will generally be sufficient to effect all the good it is capable of. Larger doses, indeed, may be given with safety, but they are rarely necessary, and frequently add much to the present discomfort of the patient. Where any decided inflammatory complication exists, the remedy should be continued until this is completely subdued, as its too early withdrawal, under such circumstances, rarely fails to be followed by renewed excitement of the arterial system, and an increase in the local inflammation. Where, however, the case is one of simple remittent, of quotidian or tertian type, the remedy need be continued but a short time after it has controlled one exacerbation. Where the type is that of a double tertian,

it is absolutely necessary, before its withdrawal, that two successive exacerbations should be controlled, for the mere suspension of *one set* of exacerbations does not secure the patient against a continuance of the other. Under any circumstances, however, when the patient is once strongly under its influence, it should be *gradually* withdrawn, as its sudden suspension is apt to be followed by that state of reaction which so frequently follows temporary depressions of the circulation from other causes.

“The best evidence of the favorable action of the remedy, is a diminution in the frequency of the pulse. This is generally also accompanied by an increase in its volume, where it has been small and corded, and where it has been hard or firm, it becomes soft. An abatement in the severity of the other symptoms, soon follows this improvement in the pulse. The skin becomes moist and cool, sometimes even so much so, as to excite considerable alarm in the patient or his friends. This coolness of the surface, attending the perspiration produced by quinine, may be readily recognized by the state of the pulse and other marks of the action of the remedy, and of an improving condition generally; and whatever the alarm of the patient and others, the *initiated* can smile in satisfactory security. The tongue also becomes gradually moist, the thirst diminishes, and an improvement in the appearance of the exacerbations soon succeeds.

“The influence of the remedy once fairly induced in the system, it is rare for another exacerbation to follow, and a gradual and continuous amendment generally goes on from this period. Occasionally, however, another exacerbation does take place, and during its continuance, the patient's situation, in some cases, is more uncomfortable than during any previous exacerbation. Not that, in regard to the symptoms generally, any increase has taken place upon the previous exacerbation,

these may be even slightly improved, but an indescribable feeling of anxiety and distress is complained of. \* \*

"Sometimes, the system being apparently under the influence of quinine, the first exacerbations, after this state is induced, will be but imperfectly controlled, and the case perhaps go on in this way for some time, each succeeding one, however, being less and less severe, till they finally yield. At other times, the first exacerbation after the system has been brought under the influence of the remedy, will seem to be controlled only so far as the heart and arteries are concerned, the pulse remaining at the same standard as during the remission; sometimes, indeed, where very full doses have been given, even less frequent, while all the other symptoms give evidence of a severe exacerbation. The tongue, for instance, has again become dry,—supposing it not to have been so during the previous remission,—while the thirst, nausea and vomiting, heat of skin and general distress, all attest a high state of fever. This state subsides at the usual hour of remission, if not before, and nothing but a continuance of the remedy, in moderate doses, through the period for the next exacerbation, is necessary to prevent its recurrence. Frequently, indeed, especially in cases taken under treatment at a sufficiently early period to prevent the occurrence of serious organic lesions, even this further continuance of the remedy will be unnecessary, and convalescence may be considered as commenced with the subsidence of this modified exacerbation.

"Although it is in all those varieties or shades of the disease termed *pernicious*; and recognized as such at first, that the quinine should be most promptly resorted to, yet we should not forget its *insidious* character, and that at times, cases, apparently of the mildest form at first; suddenly and unexpectedly assume a grave character, and perhaps prove fatal in the first severe exacerbation. It is

true, that a large majority of the cases of simple remittent fever, if drastic purgatives, emetics, and 'diaphoretic mixtures' are not ventured upon too freely, may be dallied with some time before they are beyond the control of quinine, yet, every now and then, the neglect of its early administration will have to be regretted.

"In many cases, such is the irritability of the stomach, even during the remissions, that we cannot rely with any certainty on a sufficient quantity of medicine being retained to produce the desired effect—indeed, in some cases, everything is rejected almost as soon as swallowed. Under such circumstances, the quinine may be administered in enema of starch. From twenty to thirty grains may be given in a couple of ounces of starch, every second hour, till the system is brought fully under its influence, after which, its effects may be sustained by less frequent repetitions, say every third or fourth hour. As a stimulant, the opium may be administered in the same way, and as much as the patient can bear without narcotism, say from forty drops of the tincture (laudanum) with each of the first three or four enemata, and double that quantity when the intervals between them are extended. Sometimes, when diarrhoea exists, and especially where the rectum has been rendered irritable by the previous administration of laxative enemata, there is some difficulty in retaining the quinine. When this is the case, the irritability of the rectum should be allayed before the quinine is commenced with, by an enema of starch, containing from 80 to 100 drops of the tincture of opium alone."

In contrasting the eminent success of the means above recommended, with the calomel, blue mass, and saltpetre practice of some ten or fifteen years ago, I with heartfelt pride and satisfaction congratulate the present generation; while I sympathize, retrospectively, with those

who had to suffer a long-protracted, prostrating, hurtful, dangerous, and, not unfrequently, fatal treatment; I allude to the *salivating* influence of *calomel* and *blue mass*, &c. The author has witnessed, in his own person, all the evils above enumerated, except the last, at as late a date as 1840, and to a much less extent in 1842. I well remember that, in 1840, I was taken with this form of remittent fever (the *causus*), which I can now arrest with little or no difficulty in a few days, or sooner, and, having called in a physician, who was deluded with the theory of Professor Cooke—who could trace the febrile disturbance to nothing but a morbid condition of the circulation of the liver—I objected to the incessant use of calomel, blue mass, and saltpetre. I recollect his reply: "O, I'll fatten you on it!" I took these (I had like to have said remedies) articles for several weeks without their checking the disease in the least; and when the fever eventually subsided of its own accord, these were still exhibited, till they produced intense salivation, sore mouth, spitting of blood for weeks, and extreme prostration, until I was reduced almost to a skeleton, and unable to turn over in bed. In about eight weeks from the period of attack I was able to walk out of doors, from which time a tardy and tedious convalescence ensued. When on a visit to the State of Tennessee, some years ago, I called to see a friend whom I found near the gate of death, who had been under the mercurial treatment of the Cookite above referred to, for a long time. I put a stop to this treatment, which was helping him on to the tomb, and had him put under the quinine treatment. He immediately began to improve; but his system had already been so much prostrated, and otherwise injuriously affected, that I do not believe he has even yet

fully recovered from these deleterious influences. The Cookite alluded to is also a friend of mine, and while I commend his devoted and assiduous attentions to his patients, I can but pity his delusion, and wofully sympathize with those who suffer from its results, hoping that, ere long, he will be convinced of his error, and abandon it. These are only examples of this injurious and dangerous practice. How many thousands have suffered in a like manner, or even worse? No doubt numerous graveyards could bear ample, though silent testimony, to the truth of these remarks! Nor are we to look alone to the immediate effects of this baneful practice, which lays the foundation of so many chronic maladies; for, after more or less protracted suffering, the patient, who has thus had his constitution irreparably injured, after dragging out a more or less miserable existence, ultimately succumbs.

If the means previously recommended be properly carried out, the patient and his friends will almost invariably have the pleasing satisfaction of seeing the afflicted speedily restored to health. In the management of this affection, as well as of all others of severity and danger, the people should learn the importance of securing medical aid at the commencement of the attack. Soon after the incendiary's torch is applied to a building the fire may easily be subdued, but after it has progressed for some time it may require all our efforts, which, indeed, in some cases may prove abortive. But let us proceed to the treatment of the next form of remittent fever.

3. TREATMENT OF THE COMATOSE, OR NERVOUS FORM.—First, give quinine, rhubarb, and calomel; of each, ten grains; or twenty of the latter may be advisable; to which it may sometimes, or in some cases, be well to add two grains of ipecacuanha and twenty-five drops of laud-

anum, or a teaspoonful of the tincture of lobelia. It will usually be advisable to repeat this dose in twenty-four or forty-eight hours, being careful to combine opiates with it, or to give them at intermediate times, should there be a disposition to watery evacuations from the bowels. A dose of quinine, from eight to fifteen grains, should be given about every six hours; and as there is sometimes a disposition to throw it up, morphine, one-third to one-half grain, or laudanum, ought to be given previously, or combined with it, and flannel or other woollen cloth may be dipped in a warm mixture of laudanum, brandy, or other spirits, and water, and applied over the region of the stomach; or sinapisms of mustard, or cataplasms of peppermint stewed in water; or water and brandy, or whisky, may be applied in the same way. Though, in some severe cases of this form of remittent fever, the quinine does not seem to have so prompt and decided an influence as in others, and in the other forms of malarial fevers, yet it appears considerably to ameliorate it, support the system, prevent extreme prostration, and lead the patient, with the other means, safely through this obstinate and dangerous scene. About five or six days from the commencement of the attack, the addition of a teaspoonful of tincture of puccoon root to each dose of quinine, appears to be a good combination. If the patient desires it, he should be allowed to drink cold water or iced water, or eat small quantities of ice, drink lemonade, or a solution of citric acid. Cold water should be poured over the head and neck occasionally; and, as the body or general surface is hot and dry, it should be frequently sponged with it. Notwithstanding the skin is very dry and hot, this means, in many cases, does not seem to produce so prompt, decided, and manifest an influence, as is observed in other cases, and in the simple form, the *causus*, or *causodes*. I have never resorted to

the cold bath or immersion in this form, being fearful that it might produce dangerous or even fatal prostration; but, as I have never tried it, I cannot say that my fears are well founded.

Venesection, in this form of remittent fever, I believe is generally unnecessary and unsafe. In some cases, in the first two or three days from the commencement of the attack, in which there are considerable determination to the brain, fullness about the face, forehead, and temples, with injected eyes, I am inclined to believe that a moderate venesection—the patient being in a recumbent posture—is sometimes of much service in cutting short, or rather preventing a very protracted case, by its own good effects, and also in giving the other remedies a better chance to exert their favorable influence. When this is thought advisable, it will be proper to exhibit quinine and laudanum previously, so as to have the system under their influence, to guard against prostration. It appears that in those protracted cases, in which the pulse is hard, quick, and wiry, the lancet, judiciously used, may be of much service. Dr. Campbell, of Columbia, Tennessee, more than twenty years ago, found it of great advantage in this latter modification. Dr. Bell, many years ago, in Virginia, found it of signal service in the case of a little black girl, who had been sick three weeks. Notwithstanding these favorable results, it should be resorted to with much caution and judgment, as, if injudiciously practiced, dangerous, and even fatal prostration may be induced. Active purging should also be avoided, lest it produce the same result. A few rather free evacuations should be procured the first two or three days; after which, one or two a day are amply sufficient; indeed, in the latter period of the disease, a stool once a day, or every other day, may suffice, it being preferable that the patient's bowels should be rather costive

than too loose, or disposed to run into the typhoid or fourth form of remittent fever. For aperients in this stage of the disease, we may profitably use extract of dandelion and rhubarb pills, to which may be added, every second or third night, two grains of calomel, or a blue mass pill; pills made of extract of white walnut, either alone or combined with rhubarb; and if necessary, every second or third night, a little calomel or blue mass. If the bowels should be disposed to purge too freely, they should be controlled by laudanum or paregoric, and, if necessary, the addition of some astringent, as tincture of cinnamon, krameria, catechu, kino, tannin, sugar of lead, &c.

The application of ten or a dozen ears of corn just taken out of hot water, or of steam, by placing a hot rock in a vessel, which should be placed under the cover, and the water poured upon it, may be of considerable service in moistening and softening the hot, dry skin, and contribute to produce sweating. Warmth may be applied to the extremities when they are cool or cold.

In the latter period of the disease, stimulants and stimulating aliments should be given to sustain the vital energies, and prevent the patient from sinking into fatal collapse. Port wine, brandy, Maderia wine, wine whey, and the like, may be used for this purpose; as also pulverized cayenne pepper, carbonate of ammonia, &c. Quinine should now, if the disease has sufficiently yielded, be given in doses of from four to six grains, three or four times a day, with the addition of the tincture of puccoon root, in teaspoonful doses; or less, if it nauseates. Nourishing diet, such as the stomach can digest, in small quantities, frequently repeated, should be regularly given, as wine whey, weak rice, and chicken soup, panada, etc. etc. During the first week or two after the commencement of the attack, the patient's ap-

petite is generally so completely annihilated, that he can scarcely be induced to take any nourishment; except, perhaps, a little coffee, or something of this sort, in which some crackers, light bread, or biscuit, may be mashed and soaked, so as to impart a little nutriment to the fluid. As convalescence advances, the diet should be improved.

If left to itself, or improperly treated, this form of remittent fever is justly considered a dangerous one; but when taken in time, and properly treated, I believe it may nearly always be controlled. Fortunately, it occurs less frequently than any of the other forms; but, in the progress of medical improvement, it appears that we may hope soon to see the typhoid form as rare as this—when cathartics, calomel, and emetics cease to be so much abused, or relied upon, in the treatment of the other forms of malarious fevers.

4. THE TREATMENT OF THE TYPHOID FORM OR STAGE OF REMITTENT FEVER consists principally in the use of *opiates, quinine, astringents, and moderately nourishing and easily digested aliments*. A dose of quinine—from five to ten or twelve grains—with a dose of laudanum—from twenty-five to sixty drops—should be given immediately on being called to a case of this kind; and forty or sixty drops of laudanum, with a solution of four or six grains of sugar of lead, may also be necessary (if the watery discharges from the bowels are copious and frequent), given by injection, in an ounce of starch or flour gruel, or even tepid water will answer. The quinine should be repeated four or five times in the twenty-four hours, and the laudanum two or three times a day, or as often as occasion requires, to control the purging. If the purging is obstinate, krameria, tannin, catechu, kino, tincture of cinnamon, sulphate of zinc, or even lunar caustic—in doses of from half a grain to a grain—

given in pill of crumb of bread, in which there is no salt, or in solution, may be taken with the laudanum; or, if the patient cannot take laudanum, opium or morphine, in the form of pill, may be used. These should be given two or three times a day, or as often as the purging demands their use. The injections may be given two or three times a day,—and when much opiates have been given by the mouth, a correspondingly less quantity should be given in this way,—bearing in mind that a dose by injection is double the amount given by the mouth.

In this form or stage great injury is often done by the use of mercurial cathartics, by those who erroneously suppose that the bowel affection depends on congestion or obstruction of the circulation of the liver. I am sorry to see that this delusion still holds its sway even among some of the professors or lecturers in medical schools, though abler ones deprecate their use; and we may hope ere long to see this erroneous, dangerous, and often fatal practice, banished from the minds of all enlightened medical men, and even from among the people, who have been erroneously taught to refer too many disturbances of the system to derangements of the liver.

If the bowels should become too much confined by the use of opiates and astringents, a blue mass pill, pills made of rhubarb and extract of dandelion, or rhubarb and extract of white walnut, or rhubarb alone, may be given, to procure a gentle operation once in a day or two.

If there should be determination to the head, cold or cool water should be poured over it and over the back of the neck; or cloths, dipped in cold water, may be applied to the head; and, if the skin is hot and dry, the general surface should be sponged with cool water. The external application of cold water, for the above purposes, should be repeated as often as occasion requires. Plac-

ing ten or a dozen ears of corn, just taken out of hot water, around the body and limbs of the patient, may also be of service. If the bowels should be griped, a woollen cloth, dipped in a warm mixture of brandy, laudanum, and water, or bran that has been made as warm as the patient can comfortably bear, put into a small pillow case or bag, or wrapped up in a cloth, and applied over the larger portion of the abdomen, will afford great relief.

As the disease yields, the medicines should be given in smaller quantities, which will have to be judged of by the practitioner. In the latter stages, stimulants should be given in addition to the above-mentioned remedies, as camphor, wine, carbonate of ammonia, capsicum, &c., and also some moderately nourishing diet every few hours, in small quantities at a time, as wine whey, rice and chicken soup, or squirrel, or beef soup, and the like; coffee, in which crackers or biscuit have been soaked; gruel, arrowroot, sago, tapioca, panada, etc. etc. In the latter period of this malady, when the inflammation of the bowels is tenacious, sulphuric acid is a most excellent remedy for this diseased condition; it also exerts a favorable tonic influence. As the quinine, at this stage of the disease, usually requires to be reduced to about four grains, a convenient way of giving the sulphuric acid, is in solution with the quinine. In protracted and obstinate cases, together with the use of opiates, this important article should not be neglected.

If the above means be promptly attended to, this disease may soon be arrested, and convalescence established; but if it be neglected or improperly treated in the early stages, it will be more obstinate; perhaps a case now and then will terminate fatally, or the convalescence will be slow and tedious; perhaps dropsical swellings of

the feet, ankles, and legs take place, and the patient is some time in being restored to perfect health. For this swelling of the lower extremities, and concomitant debility, muriated tincture of iron, in doses of from ten to twenty drops, three times a day, taken in half a glass of water; or a mixture of precipitated subcarbonate of iron and cream of tartar, as in the following formula, may answer well for these conditions.

R. Precip. sub. carb. iron   two ounces;  
Cream of tartar           four ounces.

Mix, and rub well together in a mortar. Dose, forty to fifty grains, two or three times a day. If the swelling of the feet and legs should be troublesome or persistent, they may occasionally be bathed in strong oak ooze; or what is better, envelop them at night with a mush poultice, made up with strong oak ooze; and if necessary, from the obstinacy of the swelling, apply a bandage in the day, commencing at the toes, and wrap the limbs firmly as high as the swelling extends.

DIET AND CONVALESCENCE IN THE DIFFERENT FORMS OF REMITTENT FEVER.—During the continuance of the fever, unless it is protracted, or extend beyond a week, little or no advice is necessary with regard to diet, as the patient usually has little or no desire for food. If, however, the fever should be checked, or the remissions complete and of some duration, and the patient should have some relish or desire for nutriment, he may be allowed some coffee, in which crackers or loaf bread have been soaked; or a little weak rice and chicken soup, a little thin panada, or the like. One or two leaves of benne may be put into a half pint of water, and used as a nutrient and demulcent drink. If the patient desires it, lemon juice may be added to this, or use it separately.

The lemon juice or lemonade is usually very much relished by the patient, and may be pretty freely allowed. Gum Arabic or slippery elm may be used for the same purposes as the benne, and prepared in the same way.

If the disease extends beyond a week, or is protracted, it will be advisable to pay particular attention to giving the patient regularly such articles of nutriment as are agreeable to his stomach, are easily digested, and somewhat nourishing, in order to sustain the system and prevent too great prostration. For this purpose, the articles above mentioned may be used, or arrowroot, farina, tapioca, sago, beef broth, wine whey, boiled milk, with a little flour in it, etc. etc. It will often be necessary to vary the diet, as one article used too long not unfrequently becomes offensive to the patient. Whatever kind of food is selected, its exhibition in a semi-fluid condition is nearly always preferable. In some cases, where there is much debility, and the stomach will not retain food or nourishment, it should be given by injection; and as a frequent repetition of the same article, even in this way, sometimes becomes offensive to the patient, it will be advisable to vary it.

CONVALESCENCE.—According to the severity of the attack, the greater or less implication of important organs, and the means that have been employed, will be the promptness or tardiness of convalescence. If the preparations of mercury have been too freely given, we may expect that convalescence will be correspondingly tardy; and in those cases in which affections of the spinal marrow occur, with debility or partial loss of the use of one or both of the lower extremities, I am inclined to principally refer to the protracted and injudicious use of mercurials, to the neglect of the use of quinine, etc., as heretofore recommended. During convalescence, tonics should

be used about three times a day; three or four grain doses of quinine, "bitters" made of dogwood bark, gentian, quassia, poplar and cherry tree bark, Peruvian bark, the bark of the willow, etc. etc., either alone or combined, will answer this purpose, especially if the system has not been too long prostrated, in which case it will be well to add some of the preparations of iron; as the subcarbonate, citrate, tartrate of iron and potassa, etc. etc. If the attack has not lasted a great while, the addition of three quarters of a grain, or a grain, of sulphate of zinc, at a dose, to any of the above-mentioned vegetable bitter tonics, is perhaps preferable, being less heating than the preparations of iron. In conjunction with the use of any of these tonics, Port or Madeira wine, or a little brandy, may be used, especially if the stomach, or rather the appetite, is impaired, defective, or irregular. At this time, usually, the appetite is so voracious, that it will require some efforts on the part of the patient to regulate his diet within proper limits, otherwise he may endanger a relapse; or sometimes eating too much may only produce slight febrile disturbance, and impair the appetite for a time. The patient should regulate his diet in that manner which is best calculated to nourish and invigorate the system. This object is not gained by taking too much or too rich diet, which the stomach cannot profitably manage, and which may oppress it, and produce a different effect from that which was contemplated. Nor, on the other hand, should he go to the other extreme of starving himself too much. His diet, first light, should be more and more nutritious, as he finds it agreeable to him, till he is able gradually to return to his ordinary mode of living. If the patient should become costive, some of the milder aperients should be given, such as extract of white walnut, rhubarb, a little black-root tea, cream of tartar and flowers of sulphur, etc. If the

bowels should become too loose, opiates and astringents ought to be given to check them. For this purpose, a mixture of equal parts of paregoric and tincture of cinnamon may be given, in doses of from one to two teaspoonfuls, as often as occasion requires. If it prove obstinate, laudanum, with some of the astringents heretofore mentioned, may be necessary.

If the patient should become restless, or troubled with a morbid vigilance, it may be controlled by a small dose of morphine (quarter of a grain), laudanum, or paregoric; or, if these should not agree with him, hyosciamus, cicuta, lactucarium, and the hop pillow or tincture of hop, may severally be given, trying first one and then the other. The room should also be well ventilated, and, if the patient is costive, a cooling aperient should be given, as cream of tartar and sulphur, or cream of tartar with the addition of lemon juice, &c.

During the continuance of the disease, the patient should not be allowed to receive much company, nor enter into interesting or exciting conversation, nor talk too intently for some time on one subject, and it is also of importance during convalescence to avoid these. If he is low spirited, the family and friends who go to see him should endeavor to cheer his drooping spirits by enlivening and pleasant conversation, and other means calculated to amuse him.

Before the patient is able to leave his bed, he should, as frequently as is agreeable to his feelings, change his position in bed, which will afford him some exercise; and the bed should be turned about and placed in different parts of the room from day to day, so as to change the scenery, and as much light may be admitted as is agreeable. All the medicines, cups, vials, &c., which have been brought into the sick room, except those that are absolutely necessary, should be removed from his

view, as they have perhaps become offensive to him, in bringing to his remembrance unpleasant or painful recollections.

When the patient is able to leave his bed, he should first take such exercise within the house as is agreeable to him; and, as his strength improves, he may venture out into the open air, and take exercise short of fatigue, either by a moderate walk, riding in a carriage, and, finally, on horseback, till his health and strength are sufficiently recovered to enable him to resume his ordinary occupation. He should, however, for some time, avoid perplexing, complicated, harassing, or disagreeable business.

It is well known that after an attack of remittent fever, while the system is still debilitated, there is great liability to attacks of ague and fever. This is unquestionably much more common in those who have been greatly reduced by the too liberal use of calomel and blue mass, a practice which is now becoming obsolete with the most intelligent and successful practitioners in the South. There are, however, not a few who are behind the times, who have not kept pace with the improvements in medicine; who are, to a greater or less extent, bound by the shackles of the past, or, indeed, I might properly say, by errors which are still extant.

If the means above recommended be properly carried out, I believe chills and fever will rarely ensue. If, however, they should, quinine, and other remedies recommended for chills and fever, will soon arrest them.

If the attack should have been in the spring or summer season, during convalescence, and till the commencement of the ensuing winter, the patient may be greatly benefited, by sponging his whole person, every morning, with cool water, and, when his system is able to bear it, by the use of the shower bath. This tends to invigorate

the system and prevent relapse, or the occurrence of ague and fever. If the attack has been in the fall, and the system much prostrated for some time, it may be well for the patient to wear flannel next the skin during the ensuing winter and the first two spring months.

JAUNDICE.—I should have remarked that during or subsequent to an attack of remittent or intermittent fever, *jaundice*, or yellowness of the skin and whites of the eyes, sometimes makes its appearance. This yields to the treatment adapted to the remittent or intermittent fever, but it should be less vigorous. Quinine, and an occasional aperient, of which calomel or blue mass may compose a part, unless the system has already been influenced to some extent by these, usually suffice to effect a cure. The quinine may be taken in doses of from four to ten grains, three times a day. At the commencement of the treatment, the bowels may be purged moderately, after which an aperient, every other night, will perhaps be sufficiently often. If the *jaundice* (*yellow janders*) should persist longer than six or seven days, it will commonly be advisable, after this period, to give aperients which do not contain any calomel or blue mass, such as extract of white walnut, a little rhubarb and jalap, cream of tartar and sulphur, &c. Blood root (puccoon root) may alone suffice for the cure of jaundice. It should be taken three times a day, diluted with water, in doses of from forty to sixty drops of the tincture, or from two to four grains of the pulverized root made into pills.

## CHAPTER XIX.

YELLOW FEVER, SOMETIMES CALLED "YELLOW JACK,"  
"VOMITO," "BLACK VOMIT," ETC.

I HAD not contemplated saying anything on the subject of *yellow fever*; but, as the improvements in medicine, of late years, appear to be working a reformation in the treatment of this disease, which is so eminently successful, compared to the empirical and various modes heretofore practiced, a brief notice of it may not be without interest to the reader.

Some consider yellow fever but a severer form of remittent fever, while others regard it as a specific disease. Dr. Bartlett's definition of it is as follows:—

"Yellow fever is an acute affection, occurring at all ages, but much more frequently during the middle and active period of life, than either earlier or later; attacking, in a large majority of instances, persons who are not permanent residents in the places where it prevails—sometimes extending, however, especially in localities where it is of rare occurrence, to such residents; rarely occurring twice in the same person; much more common in the white than the negro race; generally milder in its character amongst children and women than amongst men; confined to certain geographical localities, and especially to commercial seaports in hot climates; prevailing most extensively during the latter part of the hot season; often epidemic, but sometimes sporadic in its appearance; not capable of transmission from one person to another in a pure atmosphere; depending, for its essential cause, upon a poison of terrestrial origin,

the nature and composition of which are entirely unknown; which poison may be shut up in small and close apartments, in clothes, bedding, and so on, and transported from one place to another, and which is destroyed by a freezing temperature; sudden in its access, commencing with an initiatory chill, ordinarily of moderate severity, and of short duration; the latter, accompanied with acute and violent pains in the head, back, and limbs, or immediately followed by them, then by a red suffusion of the eyes, moderate heat of the skin, and moderate acceleration of the pulse; loss of appetite and thirst; a moist, white, villous tongue, with rosy tip and edges: these febrile phenomena diminishing in activity, and mostly disappearing, in from twenty to thirty-six hours. The first stage of the disease, thus characterized, passing, in mild cases, into convalescence; but, in grave cases, being followed, after an interval of apparent but deceptive amelioration, by nausea and vomiting; the matter ejected from the stomach, in cases that are to terminate fatally, resembling coffee grounds; black or dark colored stools; epigastric distress; general restlessness, and jactitation; sighing respiration; hiccough; a yellow color of the skin; coldness of the extremities, gradually extending to the trunk, and finally by death; the mind usually remaining free, but apathetic and indifferent up to the close of life,—which symptoms differ very widely in their degree of severity, and especially in their number and combination in different cases, thus giving rise to different varieties and grades of the disease; which symptoms, furthermore, may either subside and disappear in the course of a few days from the time of their commencement, or may terminate with death, between the third and seventh day of the disease; the bodies of patients exhibiting, on examination after death, in most cases, a yellow or buff color of the liver, with

dryness of its tissue; black spots or masses, more or less numerous in the lungs; softness and flabbiness of the substance of the heart, and in nearly all cases unusual thinness and fluidity of the blood, and redness, mamellation; changes in the thickness, and softening—one or more—of the mucous membrane of the stomach; this organ and the intestines usually containing a considerable quantity of a very dark or black fluid, or semi-fluid matter, which disease differs essentially from all others in its causes, its symptoms, and its lesions; and is only to a moderate extent at least, in its graver forms, under the control of art.”

Dr. Fenner, of New Orleans, in speaking of the epidemic yellow fever of that city in 1847, says: “As usual, the epidemic fevers gradually assumed a graver type, as the season advanced. Remittent bilious fever increased considerably in June, and soon after the 1st of July *was merged into yellow fever*. Some of the severe cases of remittent fever resembled *yellow fever* so much, that they would have unquestionably been pronounced such if they had occurred a month later. Indeed, cases much less strongly marked than some of these, were pronounced *yellow fever* during the prevalence of the epidemic. But it is customary here not to call anything originating here *yellow fever* early in the season, unless *black vomit* is seen, or has occurred. If the patient should have recently arrived from Vera Cruz or Havana, he will be pronounced yellow fever, no matter how light his symptoms.”

Dr. Fenner further remarks: “Many cases cannot be distinguished from ordinary remittent and even intermittent fever, *unless they approach a fatal termination*. Some cases admit of doubt in the earlier stages—if promptly relieved, there is doubt after they recover—but

if these same doubtful cases be neglected or maltreated, and terminate *fatally*, they then generally become *plain enough*. How often do we find doctors differing about the character of a case of fever, and at last see their decision directed more by the *attendant circumstances* than by any real value of the symptoms *per se*. If the case occur when yellow fever is common, *the slightest similitude* may influence the judgment; but if it should happen to be *the first suspicious case of the season*, or should occur *unusually late*, or out of season entirely, then the strongest evidence, such as *black vomit, hemorrhage, etc.*, will be required to settle the question." In view of these and other facts, Dr. Fenner comes to the conclusion, that "the term *yellow*, like the term *congestive*, as applied to *fever*, serves more properly to designate a condition of the system or stage of disease, than any separate, distinct, or specific form or kind of fever. Symptoms which do not uniformly distinguish a disease from all others, *before it has run its course*, or until death is about to close the scene, are unworthy to be called *diagnostic*.

"During our late epidemic, all the forms of our endemic fevers were to be seen, such as intermittent, remittent, congestive, typhoid, etc.," as may be seen by reference to the statistics of fever, in the early part of this work, page 20.

The total number of interments in the city of New Orleans, from the 3d of July to the 18th of October, 1847, inclusive, was 3990; of this number there died of yellow fever, 2241. The total number of interments in the city of Lafayette (which adjoins New Orleans, immediately above), from the 26th of July to the 21st of September, inclusive, was 793; of which, 498 were from the yellow fever. "Thus making the total deaths of all

diseases, in both cities, 4873 ; of which 2739 were from yellow fever.\*

The yellow fever appeared as an epidemic in New Orleans in 1839, 1841, and 1847. It is thought that some twenty or twenty-five thousand cases occurred during its prevalence in 1847. As in all other fevers, the poorer classes suffered most severely. "The localities around the two markets, St. Mary's and Poydras, in the Second Municipality, being densely inhabited by the lower order, were severely scourged. But it really appeared that the amount of sickness in different quarters was regulated *more by the character of the population*, than by anything *specially pertaining to the locality*. The population about New Orleans is proverbially restless and movable ; hence many persons were taken sick on their passage from the city—some on board of steamboats going up the river, others at the summer retreats across the lake, as Covington and Mandeville, Pass Christian, Pascagoula, Biloxi, etc." And further : "Those quarters suffered the most which contained *the largest number of recent and unacclimated inhabitants*. Amongst these, the poorer classes, as usual, suffered the most, on account of their manner of living, exposure to the exciting causes, imprudence, etc." But I have already extended these remarks beyond what I anticipated, and must recur to the treatment, for which purpose principally I here introduce this chapter.

As in other fevers, we find the nervous system is greatly affected, and, perhaps, concomitantly, the blood ; the muscular power is almost annihilated, and the patient prostrated. As in remittent fever, if the patient dies, *post-mortem* examination sometimes reveals pathological lesions most prominently in one organ ; and, in

\* See New Orleans Med. Journ., Sept. 1848.

other cases, another part may suffer most severely ; therefore, we need not look for a local lesion as the cause of, or characteristic of, the disease. It appears that the stomach is found most frequently affected ; but, in this age of delusion, with regard to the liver, many look to it, not only as the principal organ affected, but erroneously imagine that this *hypothetical* affection of the liver is the cause of the disease. Dr. John Harrison says : “As for the liver, the symptoms of the disease throughout its whole course, as well as *post-mortem* examinations, show that it is by no means particularly affected. The passage of bilious stools, during the first days of yellow fever, is as common an occurrence as we meet with, though not a grain of any mercurial has been taken. We find, also, bile in the gall bladder after death, so that the whole argument about the liver is just upset by these facts.”

**TREATMENT.**—This, as in remittent fever and other diseases, should be conducted upon general principles, according to the nature and severity of the attack, the attendant or accompanying symptoms or phenomena, the implication of important organs, and the stage of the disease.

From the nature of yellow fever, and a review of the different modes of treatment, I feel pretty well assured that it should be conducted on the same general principles laid down for the treatment of the different forms of remittent fever ; the milder cases requiring a correspondingly mild treatment, the severer ones demanding a more prompt and vigorous one.

At the commencement, I should think it advisable to give a dose composed of

- R. Quinine from ten to twenty grains ;
- Rhubarb from ten to twenty grains ;
- Calomel from eight to twenty grains.

Mix, and give at once. If the patient should be in any pain, or if there be irritability of the stomach, morphine (one-third to a half grain), or some other opiate should be given, either with this dose, or prior to it, in order to allay the irritability, and to relieve any pain or distress. If the stomach should be very irritable, or the fever high, with hot, dry skin, I would insist on the pretty free use of ice. Let the patient chew it up and swallow it, so that it may dissolve in the stomach. I wish that the profession, and the people generally, were aware of the great importance of ice in the treatment of the remittent fevers of the South, especially in the severer forms, attended with hot, dry skin, and irritability of the stomach, and vomiting. The patient should be allowed to eat ice pretty freely, yet so as not to overload and oppress the stomach. It acts finely, not only in controlling the gastric irritability, but in allaying restlessness, and the general irritability of the system, contributing to the tranquillity and composure of the patient, and producing moisture of the skin, or sweating. In the course of five or six hours, the quinine should be repeated, in a dose of from ten to twenty-five or more grains; and afterwards repeated three or four times a day in large doses, for the first two or three days, or till the febrile excitement is controlled, and then it should be given in doses of from four to six grains three times a day, combined with other medicines, as the condition of the patient may seem to require. If he desire it, he may be allowed lemonade, as an occasional drink. If he should have sour stomach, dissolve supercarbonate of soda in a little water, and add a little tincture of cinnamon, compound tincture of cardamom, or the like, and let him drink it as occasion requires.

If, in the early stage of the disease, the febrile excite-

ment should be very great, and any important organ—as the brain, stomach, etc.—is likely to suffer in consequence, a venesection, corresponding in amount to the constitution and vigor of the patient, and the extent of the excitement, may be demanded. Sponging the whole person with cold or cool water may also be useful in allaying the fever and relieving the head, especially by its frequent application to the latter. The body should not be sponged with the water, except when the skin is hot and dry; it should also be discontinued, if it produce chilliness. After the third day, sponging it occasionally with a mixture of water and brandy may be of some service.

At the commencement of the treatment, a few moderately free evacuations from the bowels are desirable; after which, purging ought to be avoided; one or two mild operations a day, or less frequently, being amply sufficient. If any medicine should be necessary for this purpose, the mildest aperients ought to be selected, such as rhubarb, flowers of sulphur, cream of tartar, etc. If the bowels should be too loose, a little paregoric, a combination of paregoric and tincture of cinnamon, laudanum, etc., ought to be given to restrain them within proper limits. Opiates should be given at any stage of the disease, when the irritability of the stomach, vomiting, or pain and distress of the patient demand their use. If the patient is not seen till the *black vomit* has appeared, I would give immediately a free dose of laudanum and quinine; and, if the prostration demanded it, the concomitant administration of brandy, wine, or other spirits; together with the application of a mixture of hot brandy, water, and laudanum over the region of the stomach, as is recommended for vomiting in remittent fever. Indeed, this should be applied over the stomach, to allay nausea and vomiting, in any stage of the disease; and the patient

should also eat ice. After the third day, the system is usually so much prostrated, that it will require the use of small doses of quinine (four to six grains, three times a day), camphor, brandy, or wine, wine whey, and other nourishing articles of diet, that are easy of digestion and agree well with the stomach; as, panada, with a little wine; coffee, in which crackers or biscuit have been soaked, rice and chicken soup, beef soup, etc., made palatable with salt and pepper, or other condiments.

The apartment of the patient should be well ventilated and dry; the second story of buildings in southern damp regions being, therefore, preferable to the lower ones. The apartment should also be kept rather dark and quiet, no more company being admitted than is sufficient to attend to the sick.

If the irritability of the stomach will not permit it to retain quinine and opiates, they should be given by injection, or applied to a blistered surface.

Such I believe to be the general principles which should guide us in the treatment of yellow fever; but, as the exhibition of quinine in large doses, in the early period of the disease, is different from the modes which have heretofore principally been in vogue, I will make a few quotations in order more fully to impress the importance, nay, the absolute necessity of promptly resorting to this potent remedy. Dr. E. D. Fenner, of New Orleans, in alluding to this method, says: "As practiced by Dr. McCormick, it is as follows—when the fever is fully developed, a purgative enema and mustard foot-bath are first used, and from 15 to 30 grains of quinine then given to *subdue the fever*. If the pain in the head is *very violent*, he is bled from the arm, or cups are applied to the mastoids; otherwise, blood-letting is dispensed with. The large dose of quinine seldom fails to reduce the excitement in a few hours, and then he gives 15 or 20 grains of calomel

with or without as much of the quinine combined. The foot-baths and enemata are repeated *pro re nata*; the bowels are freely purged; the fever vanishes, and the patient seldom requires more than the third dose of quinine.

“Dr. Wedderburn first orders an enema, consisting of a tablespoonful of mustard in a quart of warm water, which he says evacuates the lower bowels more promptly and efficiently than anything else. Then comes the hot mustard foot-bath, and afterwards the following dose:—

|                |              |
|----------------|--------------|
| R. Pulv. rhei. | ten grains;  |
| Pulv. ipecac.  | two grains;  |
| Calomel        | five grains; |
| Sulph. quinine | one scruple. |

Mix in syrup, and give at once. Sometimes he first gives 15 or 20 grains of quinine with 20 or 30 drops of laudanum suspended in water, and the above powder immediately afterwards. This purges freely in six or eight hours, and the quinine and laudanum are afterwards repeated according to the pain and fever. The purgative mentioned happened to be the one he mostly used last summer; he admits that some other might have done as well. This is his most general course. If the attack be very severe, and the patient suffers violent pain in any part, he at once gives from 20 to 30 grains of quinine, combined with 40 or 50 drops of laudanum, or 2 or 3 grains of opium. According to Dr. W., this dose rarely fails to extinguish both the fever and pain in a few hours. Drs. McCormick and Wedderburn both speak in the most exalted terms of their\* methods of treating yellow fever. Dr. W. *never bleeds from the arm*, and very seldom orders either cups or leeches. Other physicians

\* New Orleans Med. and Surg. Journ., Sept. 1848.

here use quinine freely in yellow fever, but not like the above-named gentlemen, *to cut the fever short at once.*"

Professor John Harrison, M. D., of New Orleans, says : "The new mode of administering the sulph. quinine consisted in waiting for no abatement of the fever, but in promptly giving the sulph. quinine as soon as possible after the attack. The dose varied from 20 to 80 grains, given in a little cold water. If the stomach was very irritable, it was given by injection. When the practice was first introduced, a cathartic was generally first given, and the administration of the quinine deferred until the bowels were moved. This practice was afterwards abandoned, on account of the loss of valuable time. In strong and robust constitutions, the lancet was employed for the purpose of producing a temporary remission, during which the quinine was given. This practice was decidedly beneficial. If the first dose failed in eight or ten hours to produce an apyrexia, a second was given. The earlier it was given the better ;" but, according to Dr. Harrison, *"it should not be given after the second day."* Dr. H. says he has given it on the third and fourth days, but always with injury to the patient. I suppose the cause of this was, that Dr. H. continued to give the quinine in large doses ; and should this have been so, we have no reason to expect that it would have produced other than injurious results ; which, in congestive, remittent, or intermittent fevers, is, always the case when thus administered after the fever has been controlled by the remedy. After the second or third day, when the febrile excitement has been controlled, I would suggest the use of lemonade, with small doses of quinine and puccoon root. Dr. Harrison says : "The fever subsides on the third or fourth day ; the pulse and skin are good ; the patient complains of no pain, and the physician sup-

poses him out of danger. The truth is, the danger is then most imminent, the most critical period of the disease has arrived, and the patient is required to be watched more assiduously than ever. It is at this stage, that a purgative, or any other medicine improperly administered, may decide his fate."

After alluding to the new mode of administering quinine, which it appears was first adopted in New Orleans by Dr. J. M. Mackie, at the suggestion of Dr. Thomas Hunt, in 1839, Dr. Harrison observes: "So much for the method of administering the sulphate of quinine; it now remains to speak of its effects. The fever in most cases was cut short, as if by enchantment. I shall never forget the surprise I felt, the first time I witnessed its effects. Three patients in the wards of Dr. Mackie were put under its influence. The conditions of the three were pretty much the same, as also were the results; the description of one case will, therefore, suffice for the whole. The patient, a robust young man, about twenty-eight years, had been taken with yellow fever at 1 P. M. He was prescribed for the same day, at 6 P. M. Ten cups were ordered to the epigastrium, 30 grains of sulph. quinine to be taken by the mouth, immediately after the cupping, and 40 grains by injection. He had been cupped before I saw him, but had not yet taken the quinine. His condition was as follows: pulse 120, full and strong; great heat of skin; great pains in the head, back, and lower extremities; tongue a little furred; eyes heavy, and a little injected; great restlessness on account of the pains. I saw him next morning, between 6 and 7 o'clock. He was perfectly free from pain; the pulse was at 84; skin cool; in short, every vestige of disease had disappeared. From prudential motives, he was kept in the hospital four or five days, and then discharged. There was never any return of the disease.

“The other cases terminated in a similar manner, and the practice was soon adopted by a number of physicians, myself among the number. The results were, in general, highly satisfactory.”

In concluding his remarks on this subject, Dr. Harrison says: “In cases in which the fever is well and fully developed, it will, unquestionably, cut that fever short, and thus prevent the formation of those local congestions which are produced by the febrile action. In this consists its value, and, assuredly, it is a great one.”\*

In those persons who are unpleasantly affected by the quinine, the *ferrocyanate of quinia*, in five-grain doses, may be used instead.

At the commencement of convalescence, great care should be taken, lest a relapse be brought about; as, by leaving the bed too soon, exposure, etc. Subsequently, the remarks made in relation to convalescence from remittent fever are applicable here.

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## CHAPTER XX.

### ACUTE RHEUMATISM.

I HERE merely call the attention of the reader to the subject of *acute rheumatism*, to inform him that it promptly yields to the treatment adapted to intermittent or remittent fever. This disease, which has caused so much pain and distress, in all past ages, to those who have been unfortunate enough to be attacked by it; the perplexity it has given to the profession—or, indeed, I

\* New Orleans Med. and Surg. Journal, Nov. 1845.

might say the giving it up in despair, by some—should induce us to congratulate the present and future ages, on the success attending the present mode of treatment; which, while it averts or relieves such a vast amount of human suffering, distress, and death, adds another trophy to the healing art, and is well calculated also to advance the reputation of the medical profession.

In plethoric subjects, at the commencement of the attack, if there should be considerable febrile excitement, it may be advisable to draw from eight to twenty ounces of blood from the arm. Soon after this operation is over—or even in cases where venesection has not been resorted to—give a dose composed of quinine, from eight to twelve or fifteen grains; morphine, from one-third to half a grain; calomel and rhubarb, each, ten grains. Repeat the quinine in doses of from six to twelve grains, three or four times a day, till the disease has yielded; then continue to give it in from three to five-grain doses, three times a day, till the health of the patient is again restored. The morphine, opium, or laudanum, should be given as often as occasion requires, for the relief of pain or restlessness.

The bowels should at first be pretty freely evacuated; after which, one or two operations a day will be sufficient; which may be procured by extract of white walnut, black root, rhubarb, the root of the common silk weed, sulphur, etc. etc. To the joints, which are principally affected, if the pain be severe, it may be of some service to apply opiate lotions, as a strong solution or infusion of Jamestown weed, opium, or laudanum, camphor, or opodeldoc, ointment of Jamestown weed, opium, poppies, etc.; the free use of warm water over the affected joint, or the firm pressure of a flannel bandage. These, however, should only be looked upon in the light of adjuvantia, the internal use of the quinine being the chief reliance.

If these means be promptly resorted to, we shall soon have the satisfaction of seeing the patient well ; nor will those metastases, translations, or migrations of the local affections of the joints, to the heart, stomach, etc., so often occur ; indeed, if the above treatment be resorted to in time, we need never expect these occurrences ; and when they do occur, quinine, opium, and calomel, if the disease has not proceeded too far, are the remedies for this condition. Free doses of quinine should be regarded as the principal remedy. If the patient should be one with whom quinine disagrees, I would advise the use of ferrocyanate of quinia, in five-grain or larger doses.

In conclusion, it may be proper to remark, that the practice here recommended does not obtain amongst the profession generally. Some southern practitioners, and a few European physicians, may be said to be the principal ones *initiated* into this new and successful mode of treating acute rheumatism.

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## CHAPTER XXI.

### TYPHOID PNEUMONIA.

NERVOUS *pneumonia*, *malarious pneumonia*, or *acute cerebro-spinal irritation with pulmonary congestion*, I consider names more applicable to this form of disease than *typhoid pneumonia*. By some it has been termed *malignant pneumonia*, and in some localities it has been called *winter fever*, in others, *bilious pleurisy* ; and in some places, in which it has been ushered in by a protracted, very distressing chill, sometimes terminating fatally, it has received the appellation of *cold plague*. In

consequence of the severe lancinating pain in the side, it is sometimes called by the country people *side pleurisy*.

Though this disease is one of the most corrigible known in the practice of medicine, if the proper treatment is early and promptly resorted to; I am sorry that truth forces me to say that it is, even at present, an opprobrium to the profession. It prevails most commonly and more universally in the latter winter and early spring months, say from January to April, or even May. It, however, may occur, though rarely, earlier in the winter, or in the summer season, especially in the former, as it sometimes prevails to some extent in December, under favorable circumstances for its development. Like intermittent and remittent fevers, it sometimes exhibits the appearance of an epidemic, which it is most likely to do when the winter and spring are very wet and variable. It is principally confined to damp or swampy situations, where chills and fever are endemic.

Though Shakspeare says there is nothing in a name—and essentially there is not, as “a rose may smell as sweet by any other name”—this disease is a woful exception to the remark; for its name (*typhoid pneumonia*) has induced those few authors who have noticed it, to associate it with the typhoid pneumonia of Ireland, other portions of Europe, and the northern portion of our own country; and the treatment recommended by European and northern authors, in the form of disease observed by them, whether proper or not, is improper and fatal in the disease under consideration.—Also, in consequence of the success of the lancet, tartar emetic, and calomel, in the treatment of open, acute inflammatory pneumonia (and indeed this treatment, with some modifications, is recommended by European and our northern authors in typhoid pneumonia), it appears

that when a disease is called pneumonia, these articles of the *materia medica* are at once associated with it in the minds of physicians; and, notwithstanding hundreds and thousands succumb, it is remarkable what an influence is exerted on practitioners by preconceived opinions, and by European and northern writers, who know little or nothing of the affection called typhoid pneumonia, occurring in the southern and south-western States. I rejoice to see that a few practitioners here and there, scattered about in different portions of the South, are beginning to appreciate, to some extent, the nature of this malady; and, though they have only in part, as yet, appreciated the proper mode of treatment, we may hope, ere long, to see this subject universally understood, and thousands of the human family saved from suffering and a premature grave. Having learned its nature and treatment from clinical or practical observation and experience, it affords me much gratification to have this opportunity of making it generally known.

It is well known that this disease, in some years, is more particularly prevalent and fatal amongst the negroes; and it has been observed that they succumb more readily to it than the white population. It most frequently attacks adults, or those over twelve or fifteen years of age; though younger persons are occasionally attacked with it, young children being very seldom, if ever, the subjects of it. It is sometimes quite fatal, especially when it appears as an epidemic, or endemico-epidemic, amongst very old persons. Sometimes it makes its appearance as an epidemic in certain districts, where it was previously scarcely known. This was the case at Hillsboro (Middle Tennessee), and the surrounding country, in the winter and spring of 1847, where it was quite fatal, in consequence, as is common elsewhere, of the improper treatment adopted; or perhaps I should

rather say, the want of prompt and proper treatment. It is more or less common in the winter and spring in many malarious districts, and occasionally appearing in some that are but slightly so, being comparatively healthy. For a few seasons past, it has been more or less prevalent in the Tennessee river valley, in North Alabama. I have been informed that in 1846 and '7 (the latter part of winter and early spring months, as usual, being the time of its prevalence), it was extremely fatal at Decatur and its environs, some 150 or more persons falling victims to it.

DESCRIPTION.—Typhoid pneumonia makes its appearance in two ways: *First*. According to the author's observation, it more frequently manifests itself in the form of, or analogous to, an ordinary catarrh, "bad cold," or influenza; such as hoarseness, a short, dry, hacking cough, with usually but little, or not free, expectoration, which is of a whitish appearance, rather dense or semi-fluid, and thrown off in small quantities at a time, which adhere together. Perhaps there is some slight, or more or less severe, headache; a general sensation of dullness or uncomfortableness, appetite more or less impaired, with some slight feverishness once a day. There is more or less pain in some portion of the chest, or in the side, which is increased by the cough. This pain, according to the author's experience, is nearly always in the right side of the chest, in the neighborhood of the right nipple, usually about two inches, less or more, to the right of it, either below or above, and rather towards the spine, apparently a kind of acute, intercostal neuralgia. This pain is more or less sharp and cutting, usually attended with some slight stricture of the chest.

The above condition may last for several days, a week, or more, till the individual either begins to convalesce,

or, what is perhaps much more common, suddenly becomes much worse, probably has a chill of greater or less severity, when the symptoms become identical or analogous to the

*Second Form of Attack.*—This form, perhaps preceded for a time by a dry, hacking cough, with some pain in the side, which is increased by the cough, makes its appearance pretty much like an attack of intermittent fever, the chill usually being more severe, with intense, almost insupportable, cutting pain, which appears to be on the outside of the ribs, or in the intercostal spaces; slight pressure causing it to be very excruciating, commonly in the right side, as noticed above; and which is rendered much more severe and troublesome by the frequent hacking cough. Respiration is short, irregular, and frequent, with an occasional deep sigh; eyes usually watery, and somewhat injected; features, perhaps, somewhat contracted, and commonly more or less of a crimson hue, without that fullness they present in inflammatory fever; at times, however, they are rather pale. In some cases the tongue is clean, and redder than natural; in others, covered with a thin, whitish fur. There is usually considerable anxiety and restlessness; more or less headache, and, in some cases, pain in the back and extremities; nausea, unpleasant or heavy sensation in the stomach, or gastric distress, and vomiting. The pulse is small, more or less increased in frequency, its powers of resistance very slight, yielding to very gentle pressure. The prostration of the patient is usually considerable; the spirits more or less dejected; frequently some degree of delirium.

In those cases which are neglected for several days, or the usual improper antiphlogistic treatment adopted, rusty sputa often soon appear; but in nearly all instances (indeed all, so far as the author's experience ex-

tends) in which the proper treatment is early and promptly resorted to, they are not seen at all. After the chill is over, or even during the chilly sensations, and while the extremities are cool, the skin is apt to be dry, and about the trunk warm; but as the disease progresses, the temperature of the skin often varies, sometimes being warm and dry, of a natural temperature, cool and dry, or cool and moist, or even clammy. After the chilly condition passes off, some degree of reaction comes on; the general surface becomes warm and dry, with, perhaps, some occasional moisture about the temples; the pulse becomes more full and resisting, but only so to a moderate degree. Subsequently, this febrile reaction may be observed to occur once a day, generally in the afternoon; preceded, in the forenoon usually, by coolness of the extremities; during this reaction, the cheeks are commonly somewhat flushed, in some instances one side being more so than the other.

In some cases, the pain in the side is scarcely perceptible; but the pulmonary congestion, oppression, or uneasiness in the chest, and difficult respiration, are considerable. These cases are attended with great prostration; a clammy sweat often ensues; and, if the patient does not receive prompt and proper attention, the prostration and dyspnoea become more and more serious, and death may be reasonably feared.

With regard to the pain in the side, which we have heretofore observed is usually in the right side, by requesting the patient to place his hand on the particular place where the intense pain is, especially soon after the attack, he will often feel about for some time, and manifest much difficulty in finding any particular spot where it is; in other words, it appears to be more or less diffused about the region where it is felt. In other cases,

the pain is circumscribed and located, occupying a very small spot, perhaps not larger than a half dollar.

**DURATION.**—If the proper treatment is adopted soon after the attack, it may be arrested in a day or two, even the severer attacks; or it may require several days, a week, or more. When a case has lasted a few days before the proper means have been resorted to, it may require from seven or eight to twelve days before convalescence will be perfect; or the case may be protracted to three or four weeks, or longer, and then recover, or die.

**CAUSES.**—I have already remarked that nervous pneumonia is almost entirely confined to the latter winter and spring months (March and April), and more especially when these are wet and variable in their temperature. I also remarked that it occurred in those damp or swampy situations where ague is endemic. It has even been observed in New England, to be more violent and fatal in swampy regions, about bogs and millponds, where intermittents were common; and yet it seems that, notwithstanding this peculiarity, authors continue to confound it with the old typhoid pneumonia, *febris petechialis* (spotted fever), or pestilential typhus, etc. Perhaps the same cause or causes which produce intermittent fever, modified by the season of the year, may, with propriety, be regarded as the cause of the disease under consideration. When it appears as an epidemic, it is commonly regarded as being, at least to some extent, dependent on, or referable to, some peculiarity of the atmosphere. Everything which has a tendency to debilitate the system, renders it more liable to be attacked with this disease; hence, those who have had the chills, remittent or congestive fever, the previous summer or autumn, are more likely to suffer with it. Exposure

in cool or cold wet weather, and especially standing or walking for some time on cold, damp, or wet, muddy ground, in districts, and in seasons of the year when it usually prevails, are very likely to produce it. Under these circumstances, we need not be surprised that it is sometimes more common amongst the negroes, especially in the rich prairie lands, or low, swampy situations. Insufficient food and clothing, protracted, exhausting labor, or indeed anything else which has a tendency to weaken the system, may render it more liable to this disease.

**PATHOLOGY.**—It would seem, that there can be no hesitation in referring the chief primary morbid impression to the cerebro-spinal region, to those parts from which nerves arise that are distributed to the thorax and its contents; these latter, therefore, not receiving a sufficient amount of nervous influence to carry on their functions normally, become congested, engorged; which, if not soon relieved, is succeeded by a low grade of inflammation. The lungs are not the only parts which suffer; as the pleura, heart, and even the stomach, also participate, or suffer, from the morbid impression made in the cerebro-spinal region, from whence the nerves originate that supply them. As we might expect, from the intimate connection of the spinal and organic systems of nerves, the functions of the organs over which the latter principally preside become impaired, and these organs, consequently, also participate in the morbid condition. So the reader will perceive that, so far as the lungs are concerned, it is not primarily a *pneumonia*, or *inflammation* of the lungs, but a *congestion*, with impaired functions. The pleura and heart also at the same time suffer from congestion; and as the disease progresses, like the lungs, may suffer from a low grade of inflammation and

effusion. The greater the primary morbid condition of the cerebro-spinal axis, and the implication of the organic system of nerves, the greater will be the affection of the thoracic viscera, and the distress and prostration of the patient. If the disease lasts for some time (which it commonly does when treated in the usual improper manner, with tartar emetic, calomel, &c.), the lungs are apt to become *hepatized*, or solidified, of the appearance and consistence of the liver. As this morbid condition of the lungs progresses from the lower to the upper portions, the air ceases to penetrate these; hence respiration is imperfectly performed, and increased in frequency. The bowels are, in most instances, easily irritated and inflamed, to an injurious degree, by irritating or active cathartics, and tartar emetic.

**PHYSICAL SIGNS.**—Soon after the attack, the vesicular or respiratory murmur will be feeble, then scarcely audible, and, as the lungs become more and more engorged, as the disease progresses, the vesicular murmur frequently disappears entirely from a large portion of the lower lobes of the lungs. Bronchophony also indicates this condition of the lungs, as does also the thoracic vibration,\* by placing the hand on the chest, and requesting the patient to speak or cough. Percussion elicits a dull sound, which becomes more and more so as the engorgement and hepaticization of the lungs increase. I believe subcrepitant or mucous rhonchi (rattle) may most commonly be heard in the region of the larger bronchia, near the bifurcation of the trachea.

**TREATMENT.**—The treatment requires some modifications, so as to adapt it to the mode and severity of the

\* See pages 112—114.

attack and the stage of the disease. I will here mention, however, that quinine and opium are the principal remedies to be relied upon; and the earlier and more promptly they are given, the sooner will the disease be arrested.

To commence the treatment in the first form of attack noticed above (analogous to a "*bad cold*"), and before the individual is "*taken down*," give a dose composed of quinine (four or five grains), laudanum (twenty-five or thirty drops), ipecac. (two grains), and a cathartic or aperient; for which latter purpose, fifteen or twenty grains of rhubarb, or eight or ten grains of jalap, or a little extract of white walnut, will answer. The quinine and ipecac. should be repeated three or four times a day, with the addition to each dose, if necessary, from forty to sixty drops of paregoric, to allay or control cough and pain; or, a teaspoonful or more may be taken at once, for this purpose. If necessary to open the bowels, the cathartics may be given every night. If there should be any attendant feverishness or excitement, six or eight grains of calomel may be added to the rhubarb or jalap, but it should not be given more than once or twice, and, if given the second time, after an interval of twenty-four or forty-eight hours. If the above means should not control the pain and cough, laudanum may be given at any time for this purpose, still continuing the other remedies. Instead of mixing paregoric with each dose of quinine and ipecac., as above, a very good mixture for this purpose may be made as follows, and taken either with the quinine, or quinine and ipecacuanha, or alone, at any other time:—

|                          |                  |
|--------------------------|------------------|
| R. Paregoric             | two ounces ;     |
| Syrup of squills         | one ounce ;      |
| Tincture of puccoon root | one ounce ;      |
| Sulphate of zinc         | fifteen grains ; |
| Water                    | four drachms.    |

Dissolve the sulphate of zinc (white vitriol) in the

water; then add the other ingredients, and shake them all together; dose, from a teaspoonful to a dessertspoonful, three or four times a day. If the case is mild, this mixture alone may be sufficient to effect a cure; but in such cases it will be necessary to give an aperient at night, as occasion requires, to which four or five grains of quinine may be profitably added. Indeed, unless the case is very mild, it will be advisable to take the quinine three or four times a day; mixed, as before advised, with the above syrup or mixture.

It is often the case that the milder symptoms, above noticed, are neglected till the case speedily assumes a violent form, analogous to a sudden primary attack, with little or no previous warning. We have already seen that when this is the case, the person attacked usually has a severe, distressing, and more or less protracted chill, frequently attended with an intense, cutting, almost insupportable pain, as heretofore observed, usually in the right side, which is greatly increased by the attendant cough; or there is considerable stricture and oppression in the chest, with less or more uneasiness, heaviness, or pain in the stomach. Commonly, an emetic should not be given, unless the patient is attacked soon after eating a hearty meal, in which case ipecac. should be taken. Soon after the emetic has caused the contents of the stomach to be thrown up—or, if it has not been necessary to give an emetic—a dose composed as follows should immediately be exhibited:—

|                     |      |                                    |
|---------------------|------|------------------------------------|
| R. Laudanum         | from | forty-five drops to a teaspoonful; |
| Sulphate of quinine | “    | eight to ten grains;               |
| Calomel             | “    | eight to twelve grains;            |
| Jalap               | “    | six to eight grains. Mix.          |

If, on account of the irritability of the stomach, the above dose be thrown up, it should be repeated. If the chill

be severe, a teaspoonful or two of sulphuric ether may be profitably given; and two or three teaspoonfuls poured on a handkerchief, held to the nose and mouth, and inhaled, will give almost immediate relief. If, in the course of half an hour, or an hour, relief should not be obtained, the laudanum ought to be repeated in a dose of from thirty to fifty drops—to an adult. If the first dose does not give relief (which, however, it rarely fails to do), the ether, or this last dose of laudanum will, almost invariably. The patient should be covered with two or three blankets; and, if he desire it, hot rocks or irons should be applied to his feet.

After the chill passes off, as before observed, there is some degree of reaction, perhaps amounting to a febrile condition, with a warm, dry, harsh skin. When this occurs, from half a dozen to a dozen ears of corn, just taken out of hot water, should be placed around the body and limbs of the patient, to soften or moisten the skin and induce perspiration; this usually has an excellent effect, not only in producing perspiration, but in contributing to the relief of the pain and thoracic distress, as well as by tending to relieve the febrile condition. If the patient desire it, he should be allowed small quantities of cold water, frequently repeated. This disease having obtained the appellation of *Pneumonia*, now is the time that practitioners resort to general and topical blood-letting, the frequently repeated exhibition of tartar emetic, calomel, &c.; all of which co-operate with the disease in prostrating if not destroying the patient. In many cases the bowels are thus irritated and inflamed, and purging and griping brought about; the rusta sputa are made to appear, which might never have occurred, if the proper course of treatment had been adopted. Some practitioners, who are not often willing to resort to

venesection, are very fond of cupping freely over the seat of pain and different parts of the chest; as they say it affords relief, and reduces the frequency of the pulse. I do not deny that cupping, in this manner, may afford temporary relief—from the shock or excitement this barbarous custom gives to the nervous system, but I believe it is illusory; as in the case of one with the toothache, who goes to a doctor's office to get the troublesome tooth extracted; when he arrives there, frequently the pain has entirely, or in a great measure, ceased; but, if he returns home without having it extracted, the *cause* of the pain not having been removed, the aching soon returns. The antiphlogistic and frequently fatal treatment here alluded to, is the one which at present is adopted by the generality of the medical world, with a very few exceptions; and when this is the case, need we be surprised that, in its fatality, typhoid pneumonia has been classed with Asiatic cholera, the plague, yellow fever, or typhus gravior? or as being, in some instances, even more fatal than these? The author is of opinion that, if the proper treatment was adopted in time, death would be very rare as the result of this disease; as, from the mode he adopts, he has not lost a single case. In the more insidious attacks, persons in the country sometimes neglect to attend to it in time, or fail to call in a physician till it has so far advanced that the lungs have become so permanently engorged, perhaps to some extent hepatized, and their functions so much interrupted or impaired, that it is no doubt impossible, in many such cases, for the best directed treatment to succeed. In the latter stages, when the system is greatly prostrated, and the lungs in the condition above noticed, authors recommend a combination of stimulants, as ammonia, with calomel and tar-

tar emetic; this the author considers very improper, especially so far as the tartar emetic is concerned, as well as the too liberal use of calomel.

After this digression, I will remark that, in some cases where the individual is of a sanguine temperament, is very stout and vigorous, and more especially when there is considerable determination to the brain, with flushed cheeks, attended with some degree of febrile excitement, hot, dry skin, pain in the head, a venesection in the early stages of the disease may be demanded; but it should not usually be resorted to, especially if the skin or extremities are cool, feeble pulse, &c., even though there is pain in the head; as, under the latter circumstances, it is most likely to be of a nervous nature, and not the result of inflammatory action in the brain.—Usually, venesection should be resolved upon with great caution, as fatal prostration might be induced by it; when, however, it is thought advisable, quinine and morphine should also be freely given, so as to support the vital powers and prevent prostration. If the excitement is not great, camphor, with the quinine, may answer a good purpose. If there should be much determination to the head, cold water applied to it, and to the back of the neck, will probably afford much relief. Cases of this kind also more imperatively demand a cathartic or two, as of calomel and jalap, at the onset of the disease; after which, cathartics should not be given; or, if thought necessary, with a wise caution; though an occasional aperient may be useful. It is extremely rare, that a case occurs in this region of country which requires venesection; but I am of opinion that, farther North, it may more frequently be demanded and resorted to with benefit, at the onset of the disease; though perhaps, even there, it is too frequently practiced.

But to return to where we left our patient, after fol-

lowing him through his chill or rigor, and the period of temporary febrile reaction, which latter is usually slight, the pulse being commonly soft and yielding. After this period, quinine, in from four to six grain doses, should be given three or four times a day, combined with a dose of the syrup or mixture before noticed, on page 317. The ears of corn, just taken out of hot water, should be applied around the body occasionally, if the skin becomes harsh, warmer than natural, or even of the natural temperature, if it is dry, which is not unfrequently the case—there being but little, moderate, or no perceptible alteration of the temperature of the surface for several days, or during the whole course of the disease, in many cases. Whenever there is dry skin—accompanied or not with pain in the side or chest, or thoracic distress, as heretofore observed—the hot corn affords great relief. If there be much pain at any time, it should be controlled by opiates; as opium, laudanum, or morphine; and in these cases it is better to give an ample dose at once, than to give small ones, frequently repeated. It will usually be sufficient to procure one or two operations from the bowels every thirty-six hours; this may be done with jalap and rhubarb; or, if the pain in the side should be located, remaining in one place, and greatly aggravated by pressure, six or eight grains of calomel should be added to as much jalap. If the skin is warm, dry, and harsh, jalap, with the other remedies, is preferable to many cathartics or aperients, because it acts so as to produce perspiration. The amount of opiates required, prevents these cathartics (which are here given as aperients, &c.) from acting unpleasantly on the bowels; if, however, they should produce too much irritation, inflammation, griping, and purging (which, however, they rarely or never do, given as directed above), these effects should be controlled by

laudanum or paregoric. According to the present mode of practice among most physicians, it is often the case that inflammation of the bowels and fatal prostration is induced, which should be avoided.

In the latter stages of this disease, and even sometimes in the earlier, some are in the habit of covering a large portion of the chest with blisters; but I am of the opinion that this barbarous custom is generally not only useless, but in many cases, perhaps a large majority of them, is well calculated to do positive harm, from the irritability, distress, and increased debility which it produces. In some cases, however, a blister over the seat of pain, between the shoulders, or on the back of the neck, may afford some relief; but a cataplasm of mustard and flour is perhaps preferable in all cases; or the application of warm spirits turpentine over these regions; together with the hot ears of corn, before mentioned, applied about the patient, who should be covered with a blanket next the body, and one or two quilts, or other bed-clothing, so as to make him comfortably warm, and induce moisture of the skin, or perspiration.

As the disease subsides, the quinine should be taken in smaller doses, say two or three grains, three times a day, till convalescence is pretty well established, after which twice a day may suffice; but the cough mixture, for which a formula has heretofore been given, ought to be continued, three times a day, as long as the cough remains; the dose, however, may be somewhat reduced as the cough yields. During convalescence, if the system be much relaxed and debilitated, with occasional colliquative sweats, some of the ferruginous preparations should be taken two or three times a day, either alone or with a little quinine; say, for instance, ten grains of sub-carbonate of iron, or three grains of copperas, with two or three grains of quinine, and the addition of three grains

of pulverized cayenne pepper, or six or eight grains of pulverized cinnamon. For this purpose, the formula given on page 168, when treating of leucorrhœa, is also well adapted.

If a case of typhoid pneumonia be treated inefficiently, so that *hepitzation* of the lungs takes place, in addition to the treatment recommended above, five or six grains of blue mass, or three or four grains of calomel, every night, may be of service; taking care, however, to suspend the mercurial before salivation is induced; nor is it commonly advisable to continue its use for a longer time than six or eight days.

The *diet* should be moderately nourishing, of easy digestion, and taken in moderate quantities, principally consulting the inclinations of the patient; taking care, however, not to let him eat anything that would in all probability prove injurious; nor should he be allowed to eat too much at once, but gradually improve his diet as convalescence becomes more and more perfect.

If the patient has been much debilitated, it may be advisable to wear flannel next the skin the remainder of the season, or till warm weather; which is more imperative if his pursuits require exposure to the weather.

As some of my professional brethren may be reluctant to embrace the foregoing views in relation to this disease, I make the following quotations, which are in part corroborative of the above, in order to convince them that they are orthodox. The following appears in the *New Orleans Medical and Surgical Journal*:—

“Parish of St. Mary’s, 19th February, 1847.

“*Messrs. Editors*: Since the 1st of January, the weather, for the most part, has been extremely unpleasant. We have had frequent and excessive rains; the

changes of temperature have been sudden and extreme—we have had much severe cold weather—more so than any I have experienced during a residence of ten years in this State. The orange trees have sustained much injury. A great mortality has prevailed among the cattle throughout the country, arising from disease, exposure to the weather, and scarcity of food.

“As a consequence of the unfavorable weather, catarrhs, accompanied with more or less febrile excitement, have been universal—few have escaped. An epidemic pneumonia has been prevailing, and still continues, in my neighborhood. Negroes are the principal subjects. I have met with but two or three cases among the whites; many of the cases have early assumed a typhoid appearance. In some of the cases, extensive hepatisation of one lung was found to exist when the cases first came under observation. Some plantations have suffered much more than others; on one plantation eleven cases occurred, most of them of a severe form.

“Since the 1st of January, I have treated about twenty-three cases; three deaths have thus far occurred; one, an old gentleman of 60, and two negro boys. I have several cases now under treatment, and cannot now predict their issue. Most of the cases I have seen, have been accompanied by great gastric irritability, so much so as entirely to forbid the use of the tartar emetic. In its treatment, I have derived the greatest advantage from the use of quinine. In the management of this disease, I consider no remedy equal to this. In many cases, it acted like a charm, in lessening the frequency of the pulse, in diminishing the number of respirations, and sustaining the vital powers. Two or three of the first cases, in which I trusted too long to the antiphlogistic treatment, succumbed; as soon as I made free use of quinine, conjoined with mercurials and opiates, the suc-

ceeding cases assumed a favorable aspect. In all cases, where I saw the patient in season, the treatment was commenced by a copious bleeding. I have given the quinine, in doses of five grains, every four or six hours, and I attribute the recovery of several of my patients solely to its use. J. B. D."

Dr. Jones, of Irwington, Georgia, writes as follows to the *Southern Medical and Surgical Journal*, dated Feb., 1848: "I am now very busily engaged in treating an epidemic pneumonia, which is prevailing extensively in this and the counties west of this place. There is something particularly interesting in the history of the disease, but it is impossible for me to give it to you now. It is confined entirely to the districts and water courses where intermittent fever is most prevalent during autumn.

"The attack is sudden and violent, with great prostration of strength; rapid, feeble, and irregular pulse; the peculiar rusty sputa appear in a few hours. It will not bear well general depletion; large doses of quinine give almost certain relief."

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## CHAPTER XXII.

### DIARRHŒA AND DYSENTERY.

DIARRHŒA and DYSENTERY are commonly treated of by authors separately; but, considering them identical, with the exception that dysentery is a severer form of diarrhœa, I will treat of them under the same head.

*Diarrhœa, lax, or looseness of the bowels*, is commonly applied to frequent, watery, or mucous discharges from the bowels, attended with very little or moderate griping

pains, and with but little or no febrile excitement—*dysentery*, *flux*, or *bloody flux*, when the evacuations are bloody, or principally consist of blood and mucous; there are also more or severer griping pains in the bowels, and tenesmus, with more or less febrile excitement. When these symptoms are attended with evacuations which do not contain blood, it has been termed *simple dysentery* (*Dysentaria alba*). According to the nature of the evacuations, some medical writers have made several varieties of *diarrhœa*, as the *serous*, *mucous*, *bilious*, &c. *Diarrhœa* and dysentery may be *acute* or *chronic*.

*Diarrhœa* is caused by improper or too much ingesta, and more particularly that to which the individual is not accustomed; as fresh pork, or any other fresh or tainted meats, crude vegetables, etc. It may also be referred to heat and moisture, to exposure, standing or lying for some time on wet or cold ground. *Diarrhœa* is a very common disease in the southern States, and frequently appears in the form of an epidemic, more particularly in the spring and fall, sometimes extending over a very large region of country, as has been the case the present spring (1849). It also seems to be a forerunner of Asiatic cholera, frequently appearing in a place or region of country a short time previous to, and during the prevalence of, the latter affection, constituting what may be termed *cholérine*. It not unfrequently manifests itself as an endemic in which case, some of the causes concerned in the production of intermittents probably play an important part. "The repercussion of acute and chronic cutaneous eruptions sometimes gives rise to obstinate attacks of the disease. It may also be produced by violent affections of the mind, particularly sudden terror and grief. *Diarrhœa* occurs very frequently in visceral and other local affections, attended with suppuration and ulcerative disorganization. Thus, in the

latter period of pulmonary consumption, colliquative diarrhœa almost invariably occurs; and the same may indeed be said of every variety of disease attended with hectic fever or extensive suppurations.”—(*Eberle*.) An obstinate form of diarrhœa attends *tabes mesenterica*, a disease of children, which we have heretofore noticed. It is also produced in children by the use of bad milk (which is the result of the want of perfect health on the part of the mother), or dentition, as well as other common causes. Diarrhœa attends or occurs in the course of other diseases, and more particularly in some, when irritating cathartics have been too freely given. It is also well known to be a very common disease amongst soldiers, as was the case with our troops in the recent campaign against Mexico. Were these cases caused entirely by exposure, climate, bad diet, or that to which they were not accustomed? or did animalculæ, taken into the stomach with impure water, or tainted meat, or musty bread, have anything to do in the production of this almost universal disease amongst the volunteers? This hypothesis appears somewhat plausible, from the fact that animalculæ were very troublesome to the wounded, as we have been informed. “*Rolander*, a student in entomology, while he resided in the house of the illustrious Swede, *Linné*, was attacked by diarrhœa or dysentery, which quickly gave way to the usual remedies. Eight days after, it returned again, and was, as before, soon removed. A third time, at the end of the same period, he was again seized with it. All the while he had been living like the rest of the family, who had, nevertheless, escaped. This, of course, occasioned no little inquiry into the cause of what had happened. *Linné*, aware that *Bartholin* had attributed the dysentery to *insects* which he professed to have seen, recommended it to his pupil to examine his fæces. *Rolander*,

following this advice, discovered in them innumerable animalcules, which, upon a close examination, proved to be mites. It was next a question, how he alone came to be singled out by them; and thus he accounts for it: It was his habit not to drink at his meals; but in the night, growing thirsty, he often sipped some liquid out of a vessel made of juniper wood; inspecting this very narrowly, he observed in the chinks between the ribs a white line, which, when viewed under a lens, he found to consist of innumerable mites, precisely the same with those he had voided. Various experiments were tried with them, and a preparation of rhubarb was found to destroy them most effectually. He afterwards discovered them in vessels containing acids, and often under the bungs of casks.”\*

Dr. Shanks, of Memphis, says: “Bowel affections may truly be regarded as the scourge of the Mississippi valley. In that portion bordering the Mississippi river, from St. Louis down, no season of the year is exempt from these affections, in some one or more of their various forms.

“Diarrhœa, in its various grades of violence, and stages of continuance, is the form most frequently presented; and, indeed, may be said to exist, in a greater or less degree, in all seasons of the year, as the endemic of the valley.”

According to Dr. Searle, diarrhœa is the mildest and most prevalent form of disease resulting from the united influence of heat and malaria, followed by the conspiring one of cold, or other concomitant causes. “Dr. Baly refers its production invariably to a malaria arising from the soil, and presents very plausible arguments to prove that such was its cause in the case of the Millbank epi-

\* Kerby and Spence's Entomology. See also South-western Med. Adv., Nov. 1847.

demie ; and, in the extension of these arguments to prove its constant production in all situations by a telluric gaseous poison, he adduces the close alliance between dysentery and other diseases which are more indisputably of miasmatic origin, namely, common cholera and fever ; and the fact that not merely have epidemics of dysentery in the penitentiary been produced or followed by the prevalence of one or other of these diseases, but that an attack of dysentery has often been ushered in by cholera, or has been combined with fever, particularly typhus and typhoid, in the same patient.”\*

*Dysentery* is most prevalent in hot or warm climates, and in the summer and fall seasons of the year. It also occurs in camps amongst soldiers, especially those stationed in warm countries ; and, occasionally, in prisons ; and not unfrequently as an epidemic, or endemic, or sporadically, in the southern and south-western States. Rains, following a long dry spell, especially if accompanied with cool weather, in the spring, summer, or autumn, often produce dysentery.

Dr. Casselberry, of Evansville, Indiana, describes an epidemic dysentery which prevailed in that city and vicinity, after the first of June, 1848, and which he refers to malaria. The unusually wet season, warm days, and cool nights, apply to dysentery generally ; as do also the earlier symptoms which he gives ; although, in many instances, dysentery appears with but slight and short premonitory symptoms.

Dr. Casselberry observes : “ The dysenteric affection is usually preceded for a day or two by premonitory symptoms, more or less marked ; such as languor, lassitude, debility, and a sensation of weight or oppression in the epigastric region, with shooting pains through the

\* By D. F. C. Amer. Journ. Med. Sci., Jan. 1848, p. 216.

bowels. The tongue is coated with a brownish fur along the middle, with red edges and tip." To continue a description of an attack of dysentery; the first manifestations of the disease may be as follows: Want of appetite; a bad taste in the mouth, frequently succeeded by nausea; and this soon by chilly sensations, commonly with occasional flushes of heat; pulse small, and more or less contracted; extremities cool, and the general surface less so, sometimes followed or alternated with warm, dry skin, and perhaps thirst. After a longer or shorter period, from a few hours to a day or two, the febrile symptoms become more permanently developed, and the pains in the bowels more griping, with less or more alvine discharges, which may have been preceded by some degree of costiveness. The first evacuations are commonly diarrhœal, the griping pains and tenesmus become more and more intense, and after a time the bloody stools, or mucus mixed with blood, appear.—The disease may make its appearance almost suddenly, without any premonitory symptoms, except perhaps for a short time; and this is more likely to occur when it has been produced by improper ingesta. "Tenesmus is one of the most constant and characteristic attendants on this affection; and the violence of this painful symptom affords us a pretty accurate measure of the violence and degree of danger of the disease. There is often considerable pain and difficulty experienced in voiding urine. The tormina are extremely distressing, particularly just before the urgent calls to stool are experienced; and a constant soreness is felt in the abdomen. The dysenteric discharges usually have a very peculiar, disagreeable smell, but no fœtor in the beginning of the disease; but in the advanced period of violent and dangerous cases, they frequently possess a pungent and cadaverous smell, and acquire a corroding

and sanious character. Sometimes a colliquative diarrhœa occurs a few days previous to the fatal termination of the disease. In some instances, the heart and arteries sympathize but very little with the local mucous inflammation, the febrile phenomena being scarcely perceptible; but much more commonly the attending fever is of a high grade. In protracted and unsubdued cases, great prostration ensues; the pulse becomes small, corded, and very frequent; the countenance contracted and cadaverous; the abdomen tender and inelastic, and sometimes flat; the skin harsh and shrunk; the breath offensive, and the gums tender and swollen. An apparent amendment occasionally occurs after these dangerous symptoms have come on, but this truce generally lasts but for a short time; for, although the pulse rises and becomes better, and the tenesmus and tormina remit, the restlessness and anxiety increase; the stools become liquid, dark, pungent, offensive; the countenance hippocratic; the extremities cold, and the surface of the body moist and clammy. At first, the tongue is covered with a white fur, becoming brown, rough, and dry along the middle in the progress of the disease, with red and moist edges. In cases of a protracted or subacute character, the edges and tip of the tongue usually become clean, smooth, and florid; and in the chronic form of the disease, the whole surface is often smooth, clean, and red, or red and granulated, like raw flesh. The urine is always scanty and high colored, and sometimes of a pungent odor.”—(*Eberle*.) In some instances, there is great gastric irritability, in which case it is almost impossible to get the stomach to retain any medicine. The premonitory symptoms are frequently analogous to those of intermittent or remittent fever.

When diarrhœa and dysentery become *chronic*, the system usually becomes very much prostrated—debili-

tated, the features pallid, the eyes sunk in the sockets; the individual gets very poor, the flesh being very much reduced, soft, and flabby; the appetite fastidious; the bowels easily affected by improper, or too much diet; occasionally, there are hectic flushes on the cheeks, with some degree of fever. Many such cases, when treated principally with mercurials—which is too common, even at the present day, under the delusion that the derangement of the liver is the principal cause of the disease—become worse and worse, swelling of the feet and ankles takes place, and in some cases dropsical effusions elsewhere, till, finally, death closes the scene. In other cases, the discharge from the bowels becomes less and less, is more of a mucous character, or is composed almost entirely of mucus and a little fæces, and the individual slowly recovers.

These diseases may, sometimes, depend on hardened fæces accumulating and producing irritation and inflammation in the bowels; but this cause is rare; far more so than was supposed by the older writers.

**PATHOLOGY.**—In all cases of diarrhœa and dysentery, with the exception of those caused by irritating matters in the alimentary canal, it would appear that the chief primary morbid impression is made on the nervous system. But, be the cause whatever it may, the local pathological condition consists in *irritation* or *inflammation*, or both; and in protracted or chronic cases, *ulcération* of the *mucous membrane* of the *colon*; and in many instances also the cæcum, lower portion of the ileum, and rectum; and, in some cases, affecting the mucous membrane throughout the whole extent of the alimentary tract. If the disease lasts for some time, the other coats of the bowel may become affected, and the bowel may even be entirely perforated. William Baly, M. D., phy-

sician to the Millbank prison, and lecturer on Forensic Medicine at St. Bartholomew's hospital, speaking of dysentery, says: "When the inflammatory action has continued long in a subacute form, the submucous coat is found much thickened, and, at an advanced period of the disease, much indurated in the situation of the ulcers. The contraction of these thickened parts, in the manner of the cicatrices of burns, sometimes is productive of strictures of the intestine.

"Dysentery, in its most severe degree, is frequently fatal in a few days. The inflammation affecting a large extent of the mucous membrane, reduces it with extreme rapidity to the state of sphacelus. In the parts most intensely inflamed, the whole mucous membrane is found swollen, and of a dark purple color, or its texture is disorganized, and its color black, green, or brown.

"When inflammation of this degree of intensity affects a large extent of the intestine, death generally ensues very rapidly. This is not, however, always the case; and when life is prolonged for several weeks, we see farther stages of the disease, or, perhaps, I should rather say, changes in the parts which the disease has destroyed, namely, the softening and the separation of the sloughs.

"It seems scarcely possible that life should long be maintained with a large portion of the alimentary canal in such a condition as this; but where the gangrenous process has not affected the coats so deeply, the patients survive for some time the loss, by sloughing, of the mucous membrane, and of much of the submucous tissue through more than half the length of the large intestines.

"When the lower part of the intestine is the seat of the disease, in cases of dysentery, a tolerably accurate estimate of the extent of mucous membrane affected may be formed, from the mere quantity of bloody mucus

discharged. The source of this bloody and mucous discharge in the acute stage of dysentery is not the solitary glands, but the tubular follicles of the mucous membrane. In the chronic stage of dysentery, also, pus, or a puriform matter, is often excreted." This matter "probably comes, in the slighter cases, from the enlarged and diseased solitary glands, and in the more severe cases from the numerous ulcers which have been left after the destruction of the glands, and of smaller or larger portions of the mucous membrane."\*

Dr. Bell, of Philadelphia, says: "Viewed anatomically, there is no essential difference" in diarrhœa and dysentery. When diarrhœa is of long standing, it is said, in some cases, to be kept up by an ulcer in the rectum, near the verge of the anus. This is said to "occur chiefly in persons of broken down constitutions, and those who have taken a great deal of mercury."

W. S. W. Ruschenberger, M. D., Surgeon U. S. Navy, Fleet Surgeon for the U. S. Squadron on the East India Station, reports the two following fatal cases, taken from the records of the U. S. Naval Hospital, New York, from notes by Assistant Surgeon, Joseph Hopkinson.

"On the 1st of April, 1847, the U. S. ship Vincennes, after a cruise in the East Indian and China seas, arrived in the port of New York. The crew had suffered severely from tropical dysentery, and those men who were attending to duty were considerably enfeebled, either by disease or extra labor, imposed on them in consequence of the number sick and therefore unable to work. Of a crew of about one hundred and eighty, thirty-five were admitted into hospital, suffering from chronic disease; of this number, twenty-two were affected with dysentery. Of the latter, nineteen were cured, one was discharged very much improved, and two died."

\* See Amer. Journ. of Med. Sci., Jan. 1848.

“CASE I. *Dysentery complicated with Pneumonia.*—Daniel Green, gunner’s mate, aged fifty-five, received from the U. S. ship Vincennes, April 2d, was admitted for treatment on board, January 7th, 1847; had been complaining two months previously; while on board, he was treated with mercurials, opiates, and topical depletion. Now emaciated; sallow, dry, harsh, shrivelled skin; tongue dry, smooth, striped longitudinally, florid; pulse regular, small, feeble, seventy-six. Milk diet.” He was treated till 11th of April, when he expired.

“*Autopsy, nine hours after death.*—Body very much emaciated; œdema of the feet and legs; abdomen inelastic and sunken. *Abdomen.*—Omentum free from fat; peritoneum thickened, and readily separable from its attachments. *Liver*—was of normal size, but its substance soft and friable; the upper surface was marked by numerous white, stellate spots, and, near the left extremity, covered with white, thickened, granular membrane. The gall-bladder, which adhered closely to the colon, contained four ounces of thin, lemon-colored bile. The *spleen* was small and hard. The *stomach* was normal in size and external appearance; the mucous coat firm. Near the pylorus, the coats were generally thickened, and close to the pyloric orifice, which was considerably contracted, was a heart-shaped ulcer, about a quarter of an inch in diameter. The coats of the duodenum were thickened, and the internal diameter of the intestine considerably diminished, but the glands of Brunner were not discernible. The small intestines were not remarkable; but the mesenteric vessels were injected, turgid. The colon was contracted in its diameter; its parietes very much thickened, the mucous coat of a dark slate color, and its whole surface thickly set with large ulcers. The mucous coat of the rectum was injected, but not ulce-

rated. The bladder was distended; its coats were thickened.

“*Thorax*.—Lungs did not collapse; extensive, but not very firm pleuritic adhesions on both sides; pleura adherent to pericardium. In the apex, and also in the upper portion of the middle of the left lung, there were cavities, each containing about an ounce of dark, olive-colored, offensive matter. The parietes of these cavities were covered by an exudation of lymph. Lung distended, and filled with frothy serum, and studded with small, blackish tubercles. The right lung more crepitant than the left; the upper lobe studded throughout with tubercles, and distended with serum; texture of both lungs softer than usual. The substance of the heart was preternaturally soft, and otherwise diseased. The pericardial sac contained about two ounces of serum, of the color of olive oil, and was found to be highly alkaline.

“*CASE II.—Autopsy*.—Body rigid, emaciated. Lungs and heart healthy. *Abdomen*.—Omentum very much injected, and adherent to the left iliac fossa, and to the colon throughout its whole course. *Liver* pale and softened; gall bladder nearly empty. *Spleen* adherent to left kidney. *Stomach* normal in appearance and size; mucous coat firm; near pyloric end was a pediculated, dark-colored tumor, of cartilaginous consistence, measuring a quarter of an inch long by one-eighth of an inch in diameter. Pyloric orifice and duodenum thickened; glands of Brunner well marked and healthy; small intestines distended to twice their normal diameter. *Colon*, covered by the thickened omentum throughout its extent, seemed as if rolled up in it; on cutting through this envelop, the great intestine was found to be a mass of softened, dark, slate-colored tissue and pus, at several points completely perforated by ulceration; the gut readily tore transversely almost by its own weight. Yellow,

fecal matter was found smeared over the inferior part of the cavity of the peritoneum; the sigmoid flexure was bound down in the iliac fossa by thickened omentum, as if an effort had been made to prevent extravasation at that point.”\*

I will briefly notice the appearances on *post-mortem* examinations in some fatal cases that occurred in the Cincinnati Commercial Hospital, reported by Professor J. P. Harrison, M. D. James Early, boatman, aged 37 years. Examination 15 hours after death. *Abdomen*.—Externally, the intestines presented a leaden hue; the entire tract of the colon; on the internal coat, was of a dark appearance; the lower half of the ileum was of a deep red color, with some small, ulcerated spots visible along the lower portion. The other viscera healthy. (2.) Samuel Butcher, aged 25 years. Examined eight hours after death. *Abdomen*.—Colon hypertrophied throughout its whole extent; all the coats thickened, but in an especial manner the mucous; numerous ulcers, penetrating deep into the hypertrophied mucous coat, studded the whole length of the colon; the lower portion (one-third) of the ileum was likewise hypertrophied and ulcerated. The stomach, duodenum, and jejunum healthy. (3.) Joseph Campbell, aged 35 years, admitted November 25th, 1845. *Sectio cadaveris*. *Abdomen*.—The stomach and small intestines were altogether natural in appearance. *Colon*, along its entire tract, from the caput cæcum coli to the rectum, was studded with ulcers, generally of the size of a split pea, but several of them much larger. These larger ulcers had penetrated through the mucous and muscular coats down to the peritoneal investment of the bowels. The *liver* and *spleen*, also the *rectum*, were healthy in aspect

\* See Amer. Journ. Med. Sci., Oct. 1848.

and size. (4.) Richard Bradshaw, aged 33 years, was admitted June 22d, 1846. *Sectio cadaveris.* *Abdomen.*—Ileum was of a deep red aspect in the lower part of its mucous coat; *colon* thickened in its whole extent—its calibre much contracted, especially in the descending portion; completely studded with small ulcers in its whole extent of internal membrane; mesenteric glands were enlarged; the urinary bladder was thickened, and the mucous coat of a deep red hue; the rectum was likewise, in its mucous coat, of an intensely red appearance. The other organs of the body healthy in size and appearance. (5.) William Crawley, aged 24 years, admitted June 3d, 1846. Has had bad health for a year, during which time he has suffered from repeated attacks of intermittent fever. Died of diarrhœa, 24th June. The *spleen* was found enlarged; *liver* healthy; the mesenteric glands augmented in size, and indurated; the mucous coat of the small intestines was of a deep red color; ulcerated spots were found in the ileum, and to a greater degree in the colon. The mucous membrane of the urinary bladder of a deep red color.—(*Western Lancet*, Nov. and Dec., 1847.)

Perhaps I have been unnecessarily tedious or particular in giving the local pathological conditions in diarrhœa and dysentery, but my object is to impress its pathology on the mind of the reader; and to show the delusion or mistaken notions of those who refer these diseases to the liver, and consequently resort to the too liberal and injudicious use of calomel and blue mass. In some of the above protracted cases, it will be seen that some of the organs were softer than natural; but this may be referred to the changed and impoverished condition of the blood, and the continued low vitality of the general system, as is the case in protracted fevers. According to Prof. Harrison, "During the whole of 1846, fifty-six cases

of diarrhœa were brought into the hospital, and of these twenty-five died." The doctor says that some of these were received when almost in *articulo mortis*. It would seem from his language that very few were brought in in this condition. It appears that he relied mostly on mercurials, adding other adjuvantia. Balsam copaiva was used in some cases; but Prof. Harrison says, it "did not, in our hands, answer the expectation which we once entertained of its efficacy." If other testimony were wanting, which is far from being the case, this great mortality is sufficient to prove the impropriety of the mercurial practice in these affections. I could refer to the experience of many physicians, to show that mercurials not only often do no good, but do actual harm—are often detrimental, indeed fatal.

**TREATMENT.**—By reference to the pathology and post-mortem examinations above, we may be able to form a pretty correct idea of the proper treatment demanded; and also readily infer how injudicious and injurious must be the mercurial and cathartic practice, heretofore, and at present, too much adopted in the management of diarrhœa and dysentery. In order to adopt a rational mode of treatment, let us keep in view the morbid condition of the bowels, their mobility or peristaltic movements, their functions, and the condition of the general system. Instead of increasing the movements of the bowels, they should be kept quieted, in order that they may have an opportunity to heal.

If diarrhœa is produced by improper ingesta, we should look upon this effort of the bowels to get rid of that which affects them unpleasantly or disagreeably in the same light that we would cathartics, which produce the same or a similar effect; and who would think of curing a disease by increasing it? The plain *indication* then, is,

if the system has not already got rid of the offending matter, which, however, it usually soon does, to wait a short time, if the patient is in no pain, till the cause of the irritation is removed, or gently aid the system to remove it; as by a small dose of rhubarb or castor oil, or other aperients; to which should be added, if there is pain or griping, a little paregoric or laudanum; after which the irritation should be controlled by opiates; as a teaspoonful or two of paregoric, or from twenty to thirty drops of laudanum. This will usually put a stop to the disease almost immediately; but, if it should not, the opiates should be repeated two or three times a day, or as often as the condition of the patient requires. If the diarrhœa comes on spontaneously, not being referable to errors in eating; as, for instance, when it is produced by the relaxing influence of heat and moisture, exposure to cold or cool damp weather; when it occurs as an epidemic, or is produced by water, in travellers, to which they are not accustomed, the opiate should be given at once, without any delay; and, even in cases that are produced by irritants in the bowels, an opiate will generally control, or at least greatly modify the irritation, even while the irritating matter is in the alimentary canal, and allow the bowels to gently expel it; or a little rhubarb or castor oil and paregoric or laudanum may be given together, if necessary, both to allay the irritation and assist the bowels to remove the irritating matter.

In cases of diarrhœa that have lasted for several days, a week, or more, it will be advisable to combine astringents with the opiates, which may commonly be done at the commencement of the treatment, in this country; and, in cases of a chronic character, astringent tonics should also be combined with them. If the case is of recent standing, a mixture of equal parts of paregoric and tincture of cinnamon—dose, two or three teaspoonfuls,

two, three, or four times a day, as occasion requires—will usually soon succeed in arresting it. Tincture of rhatany (*krameria*), catechu, kino, or nutgalls, may be mixed with the paregoric, and taken in the same doses as the above. If the disease is obstinate or severe, any of these tinctures may be mixed with laudanum, in the proportion of one ounce of the latter to two ounces of the former ; dose, from one to two teaspoonfuls, twice a day, or as often as is necessary ; or three or four grains of sugar of lead may be given with a grain or two of opium, or thirty or forty drops of laudanum, to be repeated as above. The following may be given in these severe cases : catechu and kino, in powder, ten grains of each, to which should be added a teaspoonful or two of paregoric, or thirty or forty drops of laudanum, or from one-quarter to one-half a grain of sulphate of morphine. In all cases of any severity, and even milder ones, opium, or some of its preparations, should be regarded as the most important article, and therefore should constitute the principal remedy, and be given in sufficiently large doses to control or modify the irritation and too great peristaltic action of the bowels, and the frequent discharges from them. Tannin is a powerful astringent, and may be given in two-grain doses, like the above astringents, with opiates, when their use is demanded. Oak bark, persimmon—the green fruit or bark, logwood, blackberry or dewberry root, alum, and other astringents, may also be used, when none of the above-mentioned ones are at hand ; a little paregoric or laudanum should be given with a decoction or infusion of either of these. In children, the dose of any of the above should be reduced in proportion to the age. In very young children, opium, morphine, or laudanum should not be given, it being safer and better to give from five to twelve or fifteen drops of paregoric, with some of the astringents.

I have never found any difficulty in promptly arresting acute cases of diarrhœa and dysentery by the liberal use of opiates, and in some cases the addition of astringents. I find that there is a too prevalent opinion or prejudice, even amongst the more intelligent, against stopping a diarrhœa or dysentery too soon, for fear it will prove injurious by setting up disease, or throwing the morbid action on other organs. This was the opinion of some of the older writers, and it appears to be still maintained by our northern brethren, as well as by European authors; and we might, therefore, presume that there are some grounds for these opinions amongst them; but, be this as it may, so far as my own practice and observation extend, this position does not hold good in the South. I have myself many times been attacked with a profluvia of this sort, and stopped it almost immediately by a large dose of paregoric, without any other than good results following; and though, in many of these cases, the stools will look of a light color for a day or two, no calomel is necessary. This I have observed time and again, in numerous instances.

The stomach is not usually so *irritable* but that it will retain the medicines; but, in case it should be, a teaspoonful of laudanum, with six or eight grains of sugar of lead, should be put in an ounce of thin starch or flour gruel, or tepid water, and given by injection; which should be repeated two or three times a day, or more or less frequently, as the condition of the patient requires; or a large, soft pill of opium may be introduced into the rectum, and repeated in the same manner. A warm cataplasm or poultice laid over the stomach and abdomen, may be of much service as an adjuvant, in severe cases, especially those attended with much griping pains in the bowels. In cases that are somewhat protracted, and in which the system has become relaxed and debili-

tated, I have reason to believe that a cool shower bath once a day will be of service.

Some speak favorably of the use of kreosote. Dr. May says: "The form of diarrhœa to which kreosote appears particularly applicable, is that unaccompanied by much pain and febrile excitement, but which, after the operation of a mild aperient, requires the use of absorbents and astringents to check the frequent watery alvine dejections. These cases are common enough, and the physician is seldom called in to prescribe for them; never, indeed, unless the diarrhœa resists for some time all the various astringents used in domestic practice. In such cases, I can confidently recommend the kreosote as being speedy and certain in its effects; restraining the discharges, but not producing constipation. This effect has been produced in all cases in which it has been prescribed, and is, in my opinion, its chief recommendation." Two prescriptions are employed:—

*Emulsion.* R. Gum Arabic one drachm;  
Loaf sugar one drachm;  
Kreosote four drops;  
Water two ounces.

Mix intimately. Dose, tablespoonful or more; for a child, a teaspoonful, three times a day.

*Pills.* R. Opium eight grains;  
Kreosote five drops;  
Liquorice sufficient to make eight pills.

Dose, one pill. Dr. May suggests that the presence of fever would forbid its employment. Dr. Mayes details two cases of diarrhœa, with emaciation, coming on after weaning, which he successfully treated with the kreosote, etc. The first, a little girl; whose condition is described as follows: Pale, leucophlegmatic countenance; abdomen tumid and very hot, complaining of much pain under pressure; stools excessively fetid

and dark colored, also frequent; constant harassing, dry cough; great emaciation, so much so that the integument on the extremities seemed sufficient for a second covering; no appetite at all, and some irritability of stomach; cold drinks could be retained, but everything else was refused. This assemblage of symptoms was indicative of a fatal termination of the case, and that speedily, unless some powerful remedy could arrest the progress of the disease." A teaspoonful of the kreosote emulsion was given three times a day: "at the same time, the tepid bath, medicated by an astringent infusion, was used two or three times daily; after a few days, the cold bath was used, medicated in the same manner. In less than three days, the beneficial effects of this treatment were perceptible in the improved appearance of the alvine discharges. Her amendment from this time was rapidly progressive. The last mixture made up for her was: *R.* Kreosote, six drops; loaf sugar, gum Arabic, each one drachm; carbonate of iron, half a drachm; water, four ounces—*Mix.* The vial to be well shaken before measuring a dose. A teaspoonful was directed three times a day. After using this mixture, no further medical treatment was thought necessary, but a nourishing diet and exercise were advised."\*

In cases of *chronic diarrhœa*, if the above means fail to effect a cure, the nitrate of silver, with opiates, is one of our most valuable resources. The nitrate is recently becoming more generally used in chronic diarrhœa and dysentery. It is given in doses of from a quarter to a grain, dissolved in some mucilaginous solution, or made into pill with powdered liquorice, or other vehicle. The following formula will answer for the solution:—

\* See Western Lancet, Nov. 1846, pp. 297-8. Also, May, 1847.

|                      |               |
|----------------------|---------------|
| R. Nitrate of silver | one scruple;  |
| Pure water           | eight ounces; |
| Gum Arabic           | two drachms;  |
| White sugar          | two drachms.  |

Mix well, and shake the vial just before using it. Dose, from a half to a tablespoonful, three or four times a day. Opiates should be given, either with this mixture, or at any time when the pain or frequent discharges demand their use. The nitrate of silver should also be given by injection; for this purpose, from one to two tablespoonfuls of the above solution, with the addition of from thirty to sixty drops of laudanum, if necessary, must be easily and gently injected, so as not to excite the expulsive efforts of the bowels.

Some practitioners have found the nitrate of silver very efficacious in the treatment of obstinate cases of diarrhœa in children. Dr. Hirsch, of Königsberg, found it to succeed in obstinate cases, after other ordinary remedies had failed. "It proved specifically useful in the diarrhœa of newly-weaned infants:" in "the advanced stage of such cases, when emaciation was extreme, the dejections being frequent, fetid, consisting of a variously colored, sometimes greenish, or bloody mucous, and wanting altogether the fecal character. When aphthous ulceration pervaded the mouth, and when prostration was extreme, the action of the nitrate was brilliant." His manner of giving it to them was thus:—

|                                   |               |
|-----------------------------------|---------------|
| R. Argentum nitras, crystallized, | half a grain; |
| Distilled water                   | two ounces;   |
| Gum mimosæ                        | two scruples; |
| White sugar                       | two drachms.  |

Mix well; dose, a teaspoonful, every two hours; and an enema, containing a quarter of a grain of the salt, with mucilage and a little opium, was administered. The good effects of this treatment were occasionally visi-

ble in a few hours, sometimes not until the second day. He pronounces it a specific in the diarrhœa of infants ; and found it almost equally efficacious in severe forms of diarrhœa and dysentery occurring in adults. He administered it to the latter in pills, in doses varying from one-twelfth to one-twentieth of a grain every two hours. He also gave enemata, containing half a grain, or a grain, with mucilage and opium.\*

Dr. J. C. C. Blackburn, of Barnesville, Georgia, writes as follows, in relation to the use of the *strawberry leaf*: "I have used the strawberry leaves in every form, for the cure of dysentery ; but the formula most desirable is as follows: R. one pound of the green leaves ; add to them one quart of good French brandy, and boil to one pint. Give of the strained liquor one tablespoonful every three hours, until the disease in question be relieved of its distressing symptoms. I will here add *one* case, of the origin of which I am totally ignorant.

"Mr. B., a volunteer returned from Mexico, was taken with the dysentery at Matamoros, last August, a year ago. He was placed under the direction of the surgeon to the Georgia regiment, who attended him until he pronounced his case incurable. The patient afterwards recovered sufficient strength to accompany his regiment to Monterey, and thence to Vera Cruz, where he was again prostrated by this disease. He reached home last July, with a constitution almost broken down, and placed himself under my care. I resorted to the use of every agent within my knowledge for the cure of his disease, but without success. I at length determined to try the strawberry leaves, as in the formula above mentioned. He had taken but ten tablespoonfuls when he commenced to improve, and speedily recovered. He is now *entirely*

\* See Amer. Journ. Med. Sci., April, 1848, p. 541.

*cured*, and able to attend to the duties of his calling. I have used the strawberry leaves in many cases since, with the same happy results.”\*

A decoction of the bark of the root of the sweet gum, witch hazel, butterfly root, yellow root (*red shank*), and other indigenous astringents, are sometimes used in domestic practice. Balsam copaiva and spirits of turpentine are recommended by some physicians, in chronic cases, especially when the alvine evacuations are chiefly mucus.

In protracted cases, in which the system has become pale and anemic, it will be advisable to give some of the more astringent preparations of iron, with opiates and vegetable astringents; as, two or three grains of the sulphate or carbonate of iron, the muriated tincture of iron, etc. Some authors use small doses of sulphate of zinc, or bluestone, with opiates.

Those cases that are kept up by an ulcer in the rectum, near the verge of the anus, are said to be cured by the application of nitrate of silver to the ulcer.

In protracted chronic cases, a broad flannel roller worn bound round the belly, so as to compress it firmly, though comfortably, may be of service.

DYSENTERY—TREATMENT.—The same general plan as is adapted to the severer forms of diarrhœa, is also proper in dysentery. The tormina and tenesmus in the latter, being severe, will require the more liberal use of opiates; therefore, give at once a good dose of sulphate of morphine (quarter to a half grain), or opium (one to two or three grains), or laudanum (thirty to one hundred drops). The opiates should be repeated several times a day, if necessary. A free dose, given at the commence-

\* South. Med. Journ., or South-western Med. Adv., Oct. and Nov. 1847.

ment, however, rarely fails to arrest the disease promptly. They control griping pains and distress of the patient, the frequent desire to go to stool, and frequent alvine evacuations ; produce tranquillity, ease, perhaps sleep ; perspiration ; allay the febrile irritation and excitement, and the individual is soon restored to health.

It is pretty well known, among physicians, that Dr. Stokes, of Dublin, is an advocate of the opiate treatment in dysentery. From practical experience and observation, being convinced of the correctness of this plan, and the erroneous one of calomel and purging, as taught by Johnson, and others, or, indeed, perhaps I should say, the greater portion of the profession, it afforded me much pleasure to hear Professor Elisha Bartlett, M. D., of Transylvania University, advocate this plan, after seeing Dr. Stokes. Professor Bartlett stated, if my recollection serves me correctly, that, while on a visit to Europe, one of his comrades was taken with dysentery, at Dublin. Before prescribing for his friend, he went to Dr. Stokes, and asked him what he must do for him. Must he give him calomel and cathartics ? To which Dr. Stokes replied in the negative. " But," said he, "*Cork him up ;*" "*plug him up,*" "*Give him opium.*" " Give him opium." Dr. Bartlett went back to the hotel where his friend was, and treated him accordingly, with the result of having him well in a short time. The author has met with universal success with the opiates and other means here laid down, the former being the chief reliance, especially in all acute cases ; the addition of the other means here recommended, being necessary in the chronic form of the disease.

In some cases of dysentery, the *irritability* of the stomach is so great that it will not even retain morphine or other opiates. In these cases, a teaspoonful or more of laudanum, with from six to eight grains of sugar of lead,

put in an ounce of thin starch or flour gruel, should be given by injection; and repeated two, three, or four times a day, or as often as occasion requires. This should be the principal reliance. A warm cataplasm may be laid over the stomach; or a mixture of warm spirits, laudanum, and a little water. If it can be had, ice should be eaten, to control the irritability of the stomach, allay thirst, &c.

In the early stage of the disease, if the febrile excitement is considerable, a venesection may be necessary, especially in those of full habit and sanguine temperament. A resort to this, however, as far as the author's observations extend, is very seldom necessary. A large, warm, light poultice; bran heated in an oven and put into a small sack, or a cataplasm, or turpentine—the two former being preferable—made large enough to cover the greater portion of the belly, will also contribute to afford much relief in many cases, especially those attended with griping pains in the bowels.

After the discharges have been arrested for a day or so, and it is thought advisable to procure a mild operation from the bowels, in order to remove any matters that might prove a source of irritation; or which might be necessary on account of a febrile condition of the system; a dose of blue mass, castor oil, or rhubarb, may be given, with a little paregoric; and a clyster of cool water, or some other mild one, may also be resorted to. If the skin be dry, and the stomach not irritable, two grains of ipecacuanha, or a teaspoonful of tincture of lobelia, may be usefully given with the opiates. In some obstinate cases, relief has been obtained by the use of cream of tartar. Dr. Cheyne speaks favorably of half an ounce of finely levigated cream of tartar, given every fourth or sixth hour. Dr. Lewis Shanks, of Memphis, speaking of what he terms "Dysenteric Diarrhœa," which has pre-

vailed for several years at that place, after mentioning the deleterious influence of mercurial cathartics, says: "Unlike mercurial and other cathartics, however, have been the effects of a combination of lac. sulphur, crem. tartar, and calcined magnesia, in equal bulk. Its operation has seemed soothing and alterative, in changing the morbid exhalations to healthy secretions; and it is not incompatible, and need not interfere with the use of other necessary remedies; *pro re nata*, to give this mixture, in sufficient quantity, at intervals of from two to four hours, to pass freely through the bowels." Dr. Shanks speaks highly of the influence of ice, both internally and externally. "The influence of the ice, eaten at pleasure, in allaying the thirst, and relieving the irritability of the stomach, and especially its influence, rubbed over the surface every twenty or thirty minutes, followed by drying and chafing, in relieving the blue, shrivelled, and sudden relaxation of the skin, and the pouring out of cold sweat—in restoring plumpness and color, and warmth and circulation to the surface, and life and healthy action to the diseased structure, deserves to be recorded as additional evidence of its curative powers in this condition of the system." Dr. Shanks remarks, that "In the cold, clammy sweat—and the feeble, indistinct pulse, and the great internal heat and oppression of collapse occurring in this form of disease, or from cholera morbus, and, indeed, from any other cause, no remedy in my hands has been so safe, and, at the same time, so potent, as ice, used in this way." The Doctor, however, also resorted to "general and free bleeding, followed by local depletion—fomentations—stimulating foot-baths," counter-irritation by a large blister, dressed with emollient poultices; hot fomentations to the bowels; opium, morphine, sugar of lead; injections of sugar of lead, and opium.

In very obstinate chronic cases, the remedies should be varied; as the same article, used for some time, probably loses its influence to some degree. This may explain the reason why we often see it stated that one remedy has succeeded, after many others have failed.

For *chronic dysentery*, the means recommended for chronic diarrhœa are proper. Opiates and nitrate of silver, both by the mouth and by injection, should not be forgotten, especially in obstinate cases.

It should be borne in mind that, in the low, swampy, or marshy situations in the South, these profluvia from the bowels frequently bear a certain relation to the malarious fevers of this country, in which cases it will be necessary to give quinine with opiates, and probably some of the other means mentioned in this chapter, as circumstances may require them.

The favorable notice of the *matico* (*Piper angustifolium*) as a styptic, in stopping hemorrhages, as menorrhagia, hematamesis, hemoptysis, leucorrhœa, catarrhus vesicæ, and irritable bladder, by Dr. Ruschenberger, may, hereafter, induce the profession to try its virtues in diarrhœa and dysentery. During convalescence from chronic cases, a weak solution of sulphuric acid, with some tonic and astringent vegetable infusion, may be of much service.

DIET.—Special attention should be paid to diet in the treatment of diarrhœa and dysentery; this is more particularly imperative in chronic forms of these diseases. Well-boiled rice, boiled milk, a little soup, made palatable with salt and pepper, tapioca, farina, sago, panada, and the like, should constitute the principal articles of diet. In the chronic forms, in addition to the above, chipped venison ham, in some cases bacon broiled on the coals, and other easily digestible, nourishing diet

which agrees well with the stomach, and does not irritate the bowels, may be used with profit; the object being to nourish the debilitated system, without giving so much as to prove injurious on the one hand, while we do not starve too much on the other. A rather abstemious diet, however, should be strictly observed. Mutton suet, dissolved in warm milk, has been highly spoken of by some; a tablespoonful, four or five times a day. Mucilaginous drinks may be of service, as solutions of gum Arabic, slippery elm, althea, flaxseed, benne, pith of sassafras, &c. If the system has been very much debilitated by a protracted attack, on the approach of convalescence agreeable tonics, as an infusion of gentian, to which a little elixir of vitriol or sulphuric acid ought to be added, should be used; gradually lessening the use of them, as the health becomes more perfectly established. If there is attendant anæmia, if the features are of a pale, tallowy appearance, some of the preparations of iron should be used. A little copperas, for instance, may be added to the infusion of gentian, and elixir of vitriol or sulphuric acid, in these cases.

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## CHAPTER XXIII.

### ASIATIC CHOLERA.

THIS epidemic and malignant disease now being prevalent in this country, and there being such a diversity of opinions, variety of treatment, and pretty general want of success, the author has concluded to briefly give what he considers the correct nature of the disease, and the rational mode of treatment. The consternation, confu-

sion, and perturbation that it usually excites amongst the people, appear to extend their influence to physicians; and, hence, instead of treating the disease according to the general principles of medicine, it seems that they and the people have been seeking in an empirical manner for some specific; and, notwithstanding *specifics* and *infallible cures* have again and again been announced, and tried or exhibited time and again, the cholera, it appears, kills as many, if not more than ever, according to the number attacked. All, then, should learn the folly of looking for *one particular medicine* to cure the disease; but study the nature of the malady, and be guided by the general principles of medicine in its treatment, as in other diseases: nor need we expect to be successful, in controlling this fell destroyer, till this course is adopted.

It is not the author's intention to give a history of the disease, for this of itself would require a considerable volume. It is said to have been known in India from the earliest ages, and I think it highly probable that it is one of the terrible pestilences or plagues which are spoken of, in ancient history, as being so fatal and devastating to large assemblages of persons, collected together, either for hostile, or religious or devotional purposes. It is said to have been described by Hippocrates, near 400 years before the Christian era, and after him by Aretæus and Celsus, and in 1669 by Sydenham.

The delta of the Ganges appears to be the principal residence of the pestiferous poison which produces Asiatic cholera, whence it occasionally extends to other regions of country. It has occasionally occurred in Hindostan as an epidemic, ever since it has been known to the British. In Upper Hindostan, in 1762, it is said to have proved fatal to a vast number of natives and Europeans. "In 1783, it broke out among the pilgrims, who had assembled in vast multitudes, for the purpose of ablution, at a sacred spot

on the banks of the Ganges. It is said to have destroyed not less than 8,000 of these wretched people within the brief period of eight days. In addition to these instances of the prevalence of cholera, it continued to appear occasionally in India, both sporadically and epidemically, from 1762 up to the beginning of the epidemic of 1817. At Jessore, a small town situated in the delta of the Ganges, near the tropic of cancer, and about one hundred miles north-east of Calcutta," (*Lawson*,) the Asiatic cholera is said to have made its appearance, on the 19th of August, 1817.

"The epidemic spread, from the town of Jessore, in a westward direction; and, early in September following, reached Calcutta, having severely scourged many towns in its march. The ravages of the disease continued in Calcutta during the succeeding year, and it also extended over the entire province of Bengal. It spread in a north-west direction, following the course of the Ganges, and finally reached the Himalaya mountains, when its march in that direction was, for a time, arrested. Apparently manifesting a preference for water courses, the epidemic passed from the Ganges to the Nerbudda river, and, following that stream to the coast of the Arabian sea, it reached Bombay, in September, 1818, where it destroyed 150,000 victims. The disease thus passed from the Bay of Bengal to the Arabian, traversing the entire breadth of Hindostan, a distance of about 22°, in a period of less than one year from its commencement.

"In the mean time the disease spread southward, extending over the entire Coromandel coast, and invading the islands of Ceylon and Malacca. From Ceylon it extended, in 1819, to the 20th degree of south latitude, and invaded the Mauritius. And now again, resuming its march from Malacca, it spread through the healthy climate of Siam, invaded China, scourged Canton, and other

places, but did not reach Pekin until 1821. In 1820, it arrived on the eastern coast of Africa, at Zanguebar. Thus, it will be remarked, that the disease spread to every point of the compass, and was not, as has been sometimes supposed, confined to a west or north-west course. In 1818, it spread in three directions: northward to the Himalayas, south to Ceylon and Mauritius, and westward to the coast of the Arabian sea.

“Continuing its northwestern march, the epidemic reached the shores of the Persian gulf in the summer of 1821; it thence passed up the Tigris and Euphrates, and reached Bagdad, in the same year. It is worthy of remark, that the disease did not cross the deserts of Arabia, and that Mecca, on the western borders of that country, was not invaded until 1831. From Bagdad, it crossed the desert to Aleppo; and, in 1823, reached the shore of the Caspian, and also extended to the Mediterranean. At this period it seemed to cease for a time, and did not extend beyond Astrakhan, a Russian town, containing forty thousand inhabitants, situated on the Caspian sea, at the mouth of the Volga, in the  $46^{\circ}$  of north latitude, and  $48^{\circ}$  of east longitude. In looking back over the course of the disease for six years, we perceive that it passed over  $90^{\circ}$  of longitude, and  $68^{\circ}$  of latitude, having extended from the Mauritius, in the twentieth degree of south latitude, to the forty-eighth degree of north latitude; thus crossing the equator in one direction, and in the other extending northward to the temperate zone.

“The epidemic having ceased for a time its northwestern march, after reaching the western shore of the Caspian, at Astrakhan, nevertheless continued its ravages in India, and ultimately passing the Himalayas, which seemed for a time to have arrested its progress, the disease invaded Chinese Tartary, and devastated many towns.

“After a delay in its westward march for a period of near six years, epidemic cholera resumed its progress in that direction, and suddenly appeared, in the year 1829, in Orenboorg, a Russian town, of twenty thousand inhabitants, situated on the Ural river. Reappearing at the same time at Astrakhan, at the mouth of the Volga, it ascended that river, and invaded most of the towns and provinces in its line of march. It also spread through Circassia to the river Don, which it ascended, and thus Europe was fairly invaded in the year 1829. Ascending the Volga, the epidemic finally reached Moscow in September, 1830. Continuing its march, St. Petersburg was attacked in 1831; thence it passed along the coast of the Baltic, and invaded Berlin, and many of the principal towns of Prussia. It next followed the course of the Elbe to Hamburg, which place it reached in October, 1831.

“We next witness the disease in England. It speedily passed from Hamburg to Sunderland, a seaport town, situated at the mouth of the river Wear, at which place it appeared on the 4th of November, 1831. It reached Edinburgh on the 27th of January, 1832, and on the 10th of February following it invaded London; and in March of the same year it reached France and Ireland. Calais is said to have been the first place visited in France, which occurred on the 15th of March, 1832, but within the same month it appeared also in Paris. It spread from Paris in every direction, but with different degrees of velocity. Thus, its progress from north to south was about one league in twenty-four hours, while from east to west it marched at more than double that speed.

“From England, we find this frightful disease extending to the New World. Accordingly, on the 8th day of June, 1832, it was manifested at Quebec, and on the 10th of the same month at Montreal. On the 24th of

June, the disease unexpectedly appeared in the city of New York; and it is peculiarly worthy of remark, that all the intermediate towns and provinces, on the seaboard, including those of New Brunswick, Nova Scotia, the States of Maine, Massachusetts, and Rhode Island, remained, up to this period, entirely free from the disease. It reached Philadelphia, July 5th.

“Spreading westward, Asiatic cholera probably appeared in Cincinnati on the 30th of September, 1832. The intermediate country between Cincinnati and Lake Erie was unaffected, at the time it first appeared in the city. The disease appeared simultaneously at Cincinnati Ohio, Madison Indiana, Louisville Kentucky, and St. Louis Missouri. About the last of the same month (October), the epidemic reached New Orleans, but the towns between Louisville and that city generally remained free from the epidemic. The disease spread over the United States generally [many places escaping entirely], and in the summer of 1832 invaded Mexico, and the following year appeared at Havana.”\*

South America was not visited by the disease, Yucatan being its limit in this direction.

“Returning apparently from America, cholera resumed its ravages in Europe; at this time visited Spain, France, Rome, Sicily, portions of Germany, and, some have asserted, destroyed the last victim on the banks of the Thames.

“We are not authorized to say that the epidemic of 1817 has ever subsided; it is true, its ravages have for a time abated, but it is equally certain that it never ceased to exist in some portion of India. Within a few years, however, the disease has acquired new activity, and now again appears as a wide-spread epidemic.”\*

\* Prof. L. M. Lawson, M. D., Western Lancet, Nov. 1848.

In the spring of 1846, the cholera appeared with great violence at Kurrachee, a considerable town situated in the delta of the Indus. On the 1st of June, 1847, it appeared at Tiflis, at Astrakhan on the 31st July, and at Kasan on the 4th of October. The disease proceeded on to Moscow and St. Petersburg, reaching the latter city the 16th of June, 1848, and Berlin on the 15th of August, pursuing pretty much the same course it did in the former epidemic. The ship *New York* arrived at quarantine, New York, on the 2d of December, 1848, with cases of cholera on board. The ship left Havre on the 9th of November, with 331 steerage passengers, 21 in the cabin, and 30 of the crew. The first case of cholera occurred on the 25th, after which it rapidly increased. It was stated that many of the emigrants were from Hamburg, and other parts of Germany, where the disease prevailed.\*

Soon after the arrival of the cholera at Staten Island, it appeared at New Orleans with considerable virulence, and soon after, to a limited extent, at Mobile, and is at this time (May 14th, 1849) prevailing at these places, especially the former, and along the Mississippi river and some of its tributaries, at St. Louis, Louisville, and elsewhere.

**CAUSES.**—The cause of cholera, like that of most diseases, is occult, and consequently has given rise to a variety of opinions, hypotheses, and discussions. It is thought by some, and with much plausibility, that the

\* *New York Courier and Enquirer*. See also *Western Lancet*, February, 1849. Dr. Whiting, Health Officer at Quarantine, Staten Island, says: "All the persons who have been attacked, from the first case on board ship to the last, excepting the inmates of the hospital, have been from among two hundred and seventy Germans, who have been living in Havre and its environs, where there has not been a single case of cholera. These persons were originally from Germany."

essential cause of cholera never will be discovered. Who knows the cause of chills and fever, remittent or congestive fever, measles, scarlet fever, whooping-cough, erysipelas, influenza, and so on? Who knows what electricity is; that agent which plays so important a part in the operations of nature, and which man has learned to generate, control, and make subservient to his will, to some extent, by the instrumentality of which he can converse with his fellow man, though thousands of miles distant? The truth is, man's *knowledge* is *finite*. There is a certain limit beyond which the most gigantic intellect cannot go; ultimate causes are beyond his comprehension; and though an All-wise Creator has seen fit to limit his knowledge, he has given him the capacity to comprehend much; and though the cause of cholera may not be discovered, if its nature, if the laws by which it is governed are fully ascertained, mankind may be as well off as though they had proceeded a step farther, and discovered the ultimate cause.

I am inclined to believe that Asiatic cholera is caused by a poison which the hot, low, marshy, damp country of the Ganges, under favorable circumstances, is well calculated to develop; and which, when produced, extends, by a sort of *aërial fermentation*, in an atmosphere adapted to its propagation; analogous to a little leaven which leavens a large amount of dough; or a small amount of yeast which affects a hogshead or more of sweetened water, so as to make beer, and then vinegar; and that these latter, like the cholera poison, require a certain time to extend their influence throughout the dough, or sweetened water. According to Dr. Laségue, "the greatest rapidity with which the cholera has spread over any locality, has not exceeded a rate of from two hundred and fifty to three hundred miles a month."\* Of course, it

\* Amer. Journ. Med. Sci., Jan. 1849.

may be carried with greater velocity, in a given time, by means of ships, steamboats, &c. It is said to require from two to four days, according to the temperature of the weather, for yeast to make good beer, when put into sweetened water. In relation to temperature also, the cholera-poison appears to be analogous, being somewhat impeded in its progress in winter, and again extending more rapidly on the approach of warm weather.\* After it has obtained ingress into a large city, the warmth kept up within dwellings may be sufficient to enable it to propagate itself within the city during a cold winter, while its progress will be impeded in its extension to distant places. A ship or steamboat, being kept warm within, and hundreds of passengers being crowded and confined together, and generally other attendant circumstances, is well calculated to favor the propagation of cholera.

It seems plausible to suppose, even were facts wanting, that the cholera-poison may be conveyed from one place to another, by means of goods or clothing; but unless the atmosphere is favorable to its propagation, it might not develop itself. If the *fomites* are exposed in a warm, humid, low, filthy place, the poison will, most probably, rapidly extend its influence.

The author's esteemed friend, Professor L. M. Lawson, M. D., remarks: "That the prevalence of cholera is, in some manner, associated with, or influenced by, low and damp localities, is conclusively established by the concurrent testimony of observers in every country and climate. In support of this opinion, we may quote the statement of Dr. Parkes, who says, in reference to the epidemic in Burmah, which occurred in 1842:—

"During this progress from north to south, cholera, as already stated, attacked chiefly, or exclusively, the

\* The analogy might be extended, which the reader may do.

towns and villages stationed in low, marshy places, on the banks of rivers, or the shores of the sea. It did not extend inland, and the Burmans were accustomed to escape it, by leaving their houses, and travelling into the jungle. \* \* \* They universally stated that, though they were left without food by this flight, and were exposed to the burning noonday's rays, and to the heavy tropical dews at night, yet cholera invariably left them the second or third day's march inland.

“ ‘ Alexander Thom, Esq., Surgeon to H. R. Majesty's 86th regiment, which was stationed at Kurachee, when that city was invaded by cholera in June, 1846, attaches great importance to the states of the atmosphere with reference to moisture. The prevailing wind had been westerly for two months; the temperature, at the time the epidemic broke out, stood, in the tents of the soldiers, at 98° to 104° Fahrenheit; and the quantity of moisture, says this writer, “ was greater than I ever saw in any part of the world, at any season, the dew point being at 83°, and the thermometer, in the shade, at 90°, the lowest range; even this, gives 12.19 grains of vapor in each cubic foot of air.” And the writer adds that, “ contrary to what usually occurs in that latitude, the weather was characterized by light, weak, and unsteady winds or calms, instead of strong, steady, and cool winds, so common in the month of June, at Kurachee. It is also stated, that the quantity of rain which fell during the prevalence of cholera, was much greater than is usually witnessed at this season.” Though a damp atmosphere, as along the course of rivers, is most favorable for the propagation of cholera, it is said to have prevailed in other places when the atmosphere was not more damp, or even less so than usual.’

“ During the prevalence of cholera in England, or about its commencement, Dr. Prout observed an increase

in the *weight* of the *atmosphere*," which disappeared as the cholera subsided. But "it has been found that, at other places, during the prevalence of cholera, the atmosphere was really *lighter* than natural." (*Lawson*.)

There are a variety of opinions with regard to the cause of cholera. Some refer it to *malaria*, or that which is supposed to produce the intermittent, remittent, and congestive fevers; others attribute it to *animalculæ*,\* *electrical disturbances*, carbonic acid, &c. &c. Dr. Cowdell supposes it to be of vegetable origin—that it "owes its origin to the presence of certain microscopic fungi, which are, in some mysterious manner, generated and received into the animal system. As evidence of the capability of fungi to produce disease on a very *large* scale, if they be capable of such an action at all, Dr. Cowdell refers to the observation of Fries, that a single one of the *reticularia maxima* has produced ten millions sporules; that they are exceedingly light, and, consequently, may be rapidly diffused over a large extent of surface. It is also said that they multiply more rapidly after storms; seeming to have a meteoric origin." (*Lawson*.)

It is worthy of remark that cholera is generally, if not always preceded, as a forerunner, by influenza or diarrhoea.

Anything that has a tendency to debilitate the system—to exhaust the vital resources, renders it more liable to be attacked with cholera; hence the poor, who do not have sufficient and proper nourishment and clothing; those who are intemperate and exposed, or otherwise enfeebled, are more likely to be attacked, and more apt to succumb. But it must be observed, that the opulent and the temperate are also liable to the disease.

As the cholera is most apt to appear first in low, damp,

\* There appears to be some plausibility in the animalcular theory.

dirty, or filthy situations, this fact may suggest itself to the corporate authorities of cities and towns, as to what extent they may prepare against it.

**PATHOLOGY.**—Be the cause of cholera whatever it may, apparently, the chief primary morbid impression is made on the nervous system, and mainly on the organic and spinal system of nerves; as is evinced by the looseness of the bowels, nausea, or vomiting, muscular debility, cramps in the legs or abdomen, &c.; the brain usually being but slightly affected. For aught we know, the cholera-poison may obtain ingress into the circulation chiefly by being inhaled into the lungs, and gradually produce a morbid change in the blood before the nervous symptoms are very manifest; but as the brain is only slightly affected, it appears that we should look much to the organic and spinal systems of nerves, these being so intimately connected, it might be difficult to determine which is the more affected. I believe the organic system of nerves is generally considered as being chiefly involved. Professor John P. Harrison, M. D., says: "Spasmodic, or Asiatic cholera, is a disease, primarily, of the ganglionic nervous system; it is a profound lesion of innervation, or a pervasive irritation of the nervous system of organic life."

The *post-mortem* appearances observed at quarantine, Staten Island, New York, by Dr. Whiting, were congestion of the lungs, liver, spleen, heart, kidneys, and brain. It is also said that cholera may produce death without any structural or organic lesions being found after death.

Though the watery portions of the blood, commonly called *serum*, escape from the system, through the bowels, it appears that American physicians are at present too much disposed to overlook the condition of the blood, in

their search after organic lesions, while at the same time, and with plausibility, many of them regard cholera as a nervous affection; the pathological condition of the nervous system is probably too much neglected in *post-mortem* examinations. The difficulty, minuteness, and skill required in endeavoring to ascertain the lesions of the nervous apparatus, no doubt discourage many from such attempts.

**SYMPTOMS.**—A confirmed attack of cholera is nearly always, if not always, preceded by looseness of the bowels or diarrhoea, of different periods of duration, from a few hours to six or eight days or more; and to this condition or stage of the disease the term *cholérine* has been given. Dr. Bell, of Philadelphia, describes this stage as follows: the patient “complains of lassitude; has, frequently, partial uneasiness in the region of the stomach, but this not to such a degree as to alarm him. He has frequent evacuations from the bowels, from two to a dozen times a day, not attended with much griping. His countenance is sharp and dark. He knows not of this symptom, and it is only recognizable to the eye of experience. Occasional nausea may oppress him, but this is not a very common occurrence. These symptoms may continue, varying in severity, from one to ten days, before the second stage of the disorder supervenes. The evacuations at the first are generally of a dark brown or blackish hue, and not unfrequently bilious. As the looseness continues, they gradually become less and less of a natural appearance, until they assume the consistence and aspect of dirty water. Some headache, cramp of the fingers, toes, and abdomen, and almost always slight giddiness and ringing of the ears, accompany these symptoms. Sometimes an intervening two or three days of costiveness supervenes, which is followed again by the diarrhoea, and

in a few hours collapse may come on, and, in general, nausea and vomiting.” Though very rarely indeed, if at all, it is said by some that the system may be violently attacked with cholera, without being preceded by looseness of the bowels or diarrhœa. I see it stated in a medical journal, that death has resulted without any evacuations taking place from the bowels, but, on dissection, it was found that the bowels were filled with such fluid matter as is usually discharged. This retention is referred to spasm of the sphincter ani muscle. If I mistake not, I heard my friend, Dr. Clemens, of Macon, Miss., mention this circumstance, not long since, after he returned from New Orleans, where the disease was then prevailing. It is probable that, in these cases, the diarrhœal discharges manifested themselves in the early stage of the disease; but, when the disease becomes more fully developed, the rigid contraction of the sphincter ani may prevent their escape. However, if a confirmed attack of cholera takes place without being preceded by diarrhœa, it must be regarded as a rare exception to the general manner of attack. The following judicious remarks appear in the *London Medical Gazette*, Oct. 6th, 1848:—

“Experience has added one fact of importance in a prophylactic view to our knowledge of this terrible pestilence. As a general rule, the Russian practitioners have observed, that the *suddenness of an attack* of cholera is apparent, and not real—it is, in its severe form, the secondary and intractable stage of a disease which, at its commencement, is comparatively mild and tractable; and which, if taken in time, may be without difficulty arrested by simple remedies. Their experience has led them to the conclusion, that *diarrhœa* is a precursory symptom of an attack of Asiatic cholera; and this diarrhœa may, or may not, be attended with pain in the ab-

domen." There is very frequently an entire absence of pain—a circumstance which leads to the neglect of means for remedying what appears to be a temporary disorder, but which may turn out to be the forerunner of the fatal malady. In the diarrhœa preceding cholera, when the pain has been noticed, it has been simple uneasiness, with a sense of contraction in the bowels. The number of evacuations may be from one to six or more daily; they retain, in this stage, their fecal color and odor, and are, in this respect, very different from those alvine discharges, which occur in the more advanced stage of the disorder; for these have no fecal odor or color, and resemble rice-water. This simple diarrhœa may, therefore, be considered to be the commencement of an attack of Asiatic cholera, this name being applied only to the last stage of the disease.

"The *diarrhœal* stage may last only a few hours—two or three days, or even longer. If properly treated, the second stage may be entirely averted—if neglected, this will commence suddenly and violently with those severe symptoms which are commonly the precursors of death. The suddenness of an attack of cholera is, therefore, only apparent—when inquiry has been made, the milder stage, although, in some instances, of very short duration, had really existed, but was overlooked.

"It follows from the preceding observations that, *when cholera is prevalent in a locality*, the slightest disturbance of the bowels requires attention. Considering the possible risk incurred by neglect, the fact that there is only one evacuation more than common, or that the evacuation is more liquid than natural, should receive immediate notice. If the diarrhœa really depend on other causes, and not on cholera, no mischief will follow from its arrest by medicine; if, however, it depend on the

cholera-poison, beginning already to operate on the body—then, by resorting to treatment, a life may be saved.”\*

Dr. Hawthorne says, that the “pathognomonic symptoms are, sudden debility, tremors, numbness, and general uneasiness, pain of stomach, less or more severe, occasionally headache, whiteness, and clamminess of the tongue, and precordial oppression, succeeded by purging, vomiting, and cramps.

“The disease varies more or less in its modes of attack, and in the general symptoms. The following, however, is the order in which the symptoms generally manifest themselves. The patient first complains of general weakness and languor, and what he calls a lightness in the head, an unusual feeling over the body, weight and oppression about the heart, with a disposition to sigh; accompanied with a sensation about the stomach and bowels, which he describes as a feeling of emptiness; his countenance is pale and his features shrunk, the fluids appearing to have receded from the surface. These symptoms are followed by a rumbling sensation through the bowels. The bowels are affected at intervals of a few minutes, and the discharges become more and more fluid, till they present the appearance of whey, or of rice or barley water, becoming, in many instances, nearly as clear and transparent as rock water. The relaxation and weakness increase with each discharge. The stomach becomes sick, and the contents are thrown off. The patient now feels a desire for drink, but as soon as he has swallowed it, it is immediately ejected. The sickness and retching complete the relaxation and dilatation of the discharging vessels, and the whole fluid part of the body escapes. In proportion to the escape of the serous or watery fluid from the bowels, the temperature of the

\* See also Amer. Med. Journ., Jan. 1849, pp. 222-3.

body decreases till it becomes as cold as dead. The pulse sinks in the same proportion, till it ceases to be perceptible at the wrist. Cramps then come on with torturing severity, and the voice is hoarse and stridulous. The breathing becomes laborious, with a severe pain in the region of the heart; and the patient tosses himself about anxiously, and, in vain, looking for relief, which change of position cannot afford. A profound coma calms the closing scene. This is a description of the symptoms as they occur in this form of the disease; and the whole process described, is, sometimes, completed within the space of one hour.

“In many cases, the symptoms more gradually develop themselves. The discharges from the bowels are at longer intervals—the first consisting of the natural contents, the next of a whitish matter, which becomes more gradually fluid and colorless, till it presents the almost transparent appearance already described.

“Such modifications, however, differ merely in degree. They are produced, no doubt, by peculiarity of constitution, or habits of life, or by the greater or less intensity of the existing cause.” Dr. H. also says that, in the most malignant form of the disease, the first discharges always take place from the bowels, and the patient does not vomit till the disease has carried him into hopeless collapse, or till he is at least verging on that stage. He also observes, “that the most rapidly fatal attacks in cholera commence without any vomiting, pain, or cramps, or previous warning whatever; and while, under all circumstances, under all more or less severe attacks of the disease, the earliest recourse ought to be had to remedial means, I wish to impress the importance of being specially prompt when the disease begins in this most malignant and most insidious form, in which a delay of a very short period might be attended with

fatal results. I have seen much of the fatal consequences of an error of opinion in this respect, the patient imagining it could not be cholera with which he was affected, because he had no vomiting, or pain, or cramps, when, in point of fact, it was the most fatal form of the disease; and when the vomiting and cramps did come on, they were only the fearful harbingers of collapse and death." The urine, in cholera, is very scanty, or almost entirely suppressed.

Dr. Harrison describes a case that was brought from a steamboat into town (Cincinnati), as follows: "He has all the characteristic symptoms of cholera upon him. The countenance is pinched and contracted; there is a dark areola below each eye; the hands are blue, and skin of the fingers corrugated; the breath is cold, as is also the tongue; the pulse barely perceptible; and the voice hollow, hoarse, and feeble. Here you have the rice-water material discharged per anum. He says that he feels pain in the thighs, legs, and abdomen; but the cramps, with which he has been affected, have measurably gone off—but the stomach is still irritable, and the thirst very urgent. Ferber came in day before yesterday, and was brought directly from a steamboat which left New Orleans eight or ten days ago. Several persons died on the boat, of which he was a hand; and there existed among others a strong tendency to cholera, as was evinced by bowel complaints. This poor fellow had been laboring under diarrhoea for several weeks, which was allowed to go on unchecked by medicine.

"He has no severe pains anywhere—slight soreness of the muscles, previously cramped, and his mind entirely clear—no coma, nor delirium, or incoherency of thought. I find, on applying my ear close to his chest, that there exists a natural vesicular murmur; the air enters freely

into all the ramifications of the bronchial apparatus, and into the pulmonary cells."

The mind is usually but slightly or not at all affected in cholera, the patient commonly retaining his senses till he is on the very verge of death.

A *reaction*, even to a *febrile condition*, may ensue or be brought about, and the individual may recover, or he may relapse again into the collapsed condition, and succumb.

MEANS OF PREVENTION.—Places and habitations should be kept as clean and dry as possible, and well aired; and the people should not suffer themselves to become unnecessarily alarmed, as this may place the system in a condition to be more easily affected with the cholera-poison. The people should observe their regular ordinary mode of living, to the avoidance of any diet that is known to disagree with them, or anything to which they are not accustomed, and avoid all debilitating causes whatever, the intemperate use of intoxicating liquors, &c.

A committee, appointed by the Royal College of Physicians, London, gives the following advice: "A state of debility or exhaustion, however produced, increases the liability to cholera. The committee, therefore, recommend all persons, during its prevalence, to live in the manner they have hitherto found most conducive to their health; avoiding intemperance of all kinds, and especially the intemperate use of ardent spirits, and other intoxicating liquors. A sufficiency of nourishing food, warm clothing, and speedy change of damp garments; regular, and sufficient sleep, and avoidance of excessive fatigue, of long fasting, and of exposure to wet and cold, more particularly at night, are important means

of promoting or maintaining good health, and thereby afford protection against the cholera.

“The committee do not recommend that the public should abstain from the moderate use of well-cooked green vegetables, and ripe or preserved fruits. A certain proportion of these articles of diet is, with most persons, necessary for the maintenance of health. The committee, likewise, think it not advisable to prohibit the use of pork or bacon, or of salted, dried, or smoked meat or fish, which have not been proved to exert any direct influence in causing this disease.

“On the whole, the committee advise persons living in districts in which cholera prevails, to adhere to that plan of diet which they have generally found to agree with them, avoiding merely such articles of food as experience may have taught them to be likely to disorder the stomach and bowels.”

It may not be amiss here to remark, that some are of opinion that the cholera is exclusively contagious; others, that it is not contagious, but epidemic; and, others again, believe that it is both contagious and epidemic. If it be exclusively the one or the other, I am of opinion that it is contagious; that is, that the poison is conveyed from place to place, by means of goods, vessels, &c.; and that a person may carry the cholera-poison from one place to another in his clothes, even though he may not be attacked himself. In corroboration of these views and others, expressed under the head of *causes*, it is well known that the cholera most generally pursues the great commercial routes and thoroughfares, along the humid course of rivers more particularly; and it may be, that carbonic acid, as along water-courses, and in the larger cities and towns—particularly favors its propagation. If the views mentioned above be correct, we can understand why the cholera

sometimes breaks out simultaneously in several towns, without the citizens being able to trace it to contagion; as the cholera-poison may have been brought in the clothes of individuals, who never had the disease, but who had been in the cholera atmosphere, or it may have been brought in goods; or, if the distance is short, the cholera-poison may have made its way through the atmosphere.

I believe it has been said that a certain degree of temperature destroys the cholera-poison—probably  $250^{\circ}$  or upwards. My recollection is not positive as to the requisite amount of heat.

CHOLERINE, TREATMENT OF.—All modes of practice that have as yet obtained much notoriety are unsatisfactory, and, as the author believes, justly so, from the fact that they are not adapted to the nature of the disease. While this is very much to be regretted, it may be accounted for on the grounds of the various and erroneous opinions that have been entertained in relation to it, and the general disposition to seek, in an empirical manner, for some *specific* or *infallible cure*. In the first place, the *nature* of cholera should be understood; then it should be treated on the general principles of medicine, according to the science, according to common sense; and this the author will endeavor to briefly point out theoretically, while he is not wanting in facts corroborative of his views. Indeed, the author is of opinion that very few cases would terminate fatally, if these views were carried out in practice.

For the *cholerine*, the *diarrhœa*, or looseness of the bowels which precedes a confirmed attack of cholera, I would recommend the treatment heretofore given for common diarrhœa. As soon as it makes its appearance, it should

be immediately arrested by opiates, or opiates and astringents. For this purpose opium or laudanum, or paregoric, or either of these combined with astringents, should be given, the dose proportioned to the severity of the attack, and repeated as often as the condition of the patient requires it, according to the readiness or obstinacy with which the looseness of the bowels yield. Ordinarily, perhaps, one or two teaspoonfuls of paregoric, or from twenty-five to forty drops of laudanum, or a grain or two of opium will be sufficient. It may, however, be necessary to repeat one of these two or three times in the course of the day. The following mixture is well adapted to most, if not all cases :—

R. Paregoric two fluid ounces ;  
Tincture of kino, or catechu, or krameria, two fluid ounces.

Dose, two or three teaspoonfuls, two, three, or four times a day, or as often as occasion requires. Perhaps this will rarely fail to check the disease. If, however, in the course of an hour, no perceptible check is put to the diarrhœa, the dose should be repeated, or if the looseness of the bowels is considerable, forty drops of laudanum should be added to a dose of the above mixture, and taken immediately. Four or five grains of sugar of lead, with thirty or forty drops of laudanum, may be given in lieu of the above ; or any of the astringents mentioned when treating of diarrhœa, may be given with laudanum, opium, sulph. morphine, or paregoric. After the looseness of the bowels is checked, they should not be entirely neglected ; for if the looseness should again return, it should be immediately arrested by the above-mentioned means. In the mean time, if the individual should feel somewhat languid or dull, his system relaxed and debilitated to some extent, it may be well to take some tonic medicine, three times a day, as a little infusion of

gentian, dogwood, or the like, or two or three grains of sulph. quinine. If the bowels are made costive from the use of opiates, or opiates and astringents, wait two or three days for them to move themselves, which, if they fail to do, they may be cautiously assisted by ten or fifteen grains of rhubarb, or an injection of cool water. The *diet*, in the mean time, should be somewhat abstemious, though in moderate quantities, and sufficiently nourishing, and of such articles as are found to agree well with the stomach.

I would insist on all those who feel interested for their own safety, that of their families, friends, or servants, to pay particular attention to the first manifestations of *cholérine*, and immediately arrest it by the above means. All those who are travelling on boats or otherwise, or residing where the cholera is prevalent, should prepare themselves with a bottle of the above mixture, and a vial of laudanum especially, and also the other articles referred to.

**CHOLERA, TREATMENT OF.**—When an individual is attacked with cholera—the cold extremities; cold, contracted, perhaps bluish surface; the copious and frequent watery evacuations from the bowels; the prostration, cramps, &c., are indexes to a condition of the system which most imperatively demands prompt and vigorous treatment, adapted to the severity of the attack. When a case is of moderate or ordinary severity, I would recommend the immediate exhibition of a teaspoonful of laudanum, with about twelve or fifteen to twenty or thirty grains of sulphate of quinine. If the case is a severe one, I would also recommend that, at the same time, a teaspoonful of laudanum and six grains of sugar of lead be put into an ounce of thin starch or flour gruel, or tepid water, and gently injected into the rectum.

The quinine should be repeated in from three to five hours, and the dose reduced to eight or ten grains, if the previous one of quinine and laudanum has had the desired effect in bringing about reaction, &c. The dose of laudanum at this time should also be reduced or omitted, if the previous one has had the desired effect in assisting to bring about reaction, in arresting the discharges from the bowels, or if it has produced considerable narcosis; under these circumstances, it should be deferred till its use is indicated. If these medicines be ejected from the stomach or rectum, they should be repeated in a minute or two. In the more violent cases, there appears to be much difficulty, in many of them, to get medicines to remain on the stomach. When this is the case, a grain of sulphate of morphine should be dissolved in a tablespoonful of cold water, and taken some ten minutes before the administration of twenty or thirty grains of quinine. Two teaspoonfuls of laudanum, with thirty or forty grains of quinine, should also be immediately given by injection, first being mixed with two or three ounces of thin starch or flour gruel. If medicines cannot be retained in either of these ways, by the stomach or rectum, a tolerably large blister, say four or six inches square, should be immediately made over the region of the stomach, by means of acetic acid, ammonia, hot water, or otherwise, and a grain or two of morphine, and thirty or forty grains of quinine, mixed with some thin paste, made of starch or flour and water, immediately applied to the blistered surface. The quinine should thus be sufficiently diluted, so as not to produce pain.

In addition to the above, for the gastric *irritability* and thirst, the patient should eat *ice*, pretty frequently repeated, and in rather liberal quantities, if he desires it, but not to such an extent as to overload the stomach or to fill it with water, and thereby produce vomiting. But

I believe it is more safe to err in giving too much than not enough; if the water is thrown up, the stomach will be in a good condition for the reception of the ice. I would insist that, wherever ice can be obtained, its free use be not neglected. If it cannot be obtained, the coldest and best water should be used. If ice, taken alone, affects the stomach unpleasantly in the cold, or collapsed stage, it should be crushed, and taken in some brandy, tincture of asafetida, or the like. In the severer cases, in addition to the above, and simultaneously with it, I would recommend the exhibition of stimulants, to bring about or assist in bringing about reaction; as a dessertspoonful of sulphuric ether, given in half a glass of sweetened water, briskly stirred, and to be immediately drunk. Camphor and French brandy, port wine, or other spirits, may be used instead of the ether; the latter, however, being preferable, as its action is more prompt. A dessertspoonful or two may also be poured on a folded handkerchief, and held to the mouth and nostrils, in cases attended with pain and cramps, so as to be inhaled, which will hasten its influence on the system.

The quinine should be repeated every three or five hours, in doses proportioned to the severity of the attack and the influence of the remedies. In the intervals of giving the quinine, a dose of sugar of lead (three or four grains), kino (twenty grains), catechu (thirty grains), krameria (the tincture, two fluidrachms), creasote (one drop), or the like, should be given. *The copious liquid evacuations from the bowels must be arrested, and reaction and warmth restored to the general surface, and the tone of the nervous system braced or increased, or the patient will die.*

As soon as an individual is attacked with cholera, he should immediately be put to bed, and covered with two or three blankets.

As to *external medication*, in endeavoring to bring about reaction, perhaps nothing is superior to a dozen or two ears of corn, just taken out of hot water, and applied about the body and extremities. Hot rocks, bricks, irons, bottles filled with hot water, or other similar means may, however, be resorted to, when the hot corn is not convenient; and the general surface should be rubbed assiduously with warm spirits and pepper, or mustard, or warm spirits of turpentine. Frictions, particularly along the course of the spine, as well as to the cold extremities and surface, should receive attention. If convenient, and if it can be done without the patient having to raise up, plunging the feet and legs into water as hot as it can comfortably be borne, to which pepper or mustard has been added, may be of some service; but, if the hot corn is used, it will supersede the necessity of this, at least to a great extent.

It is probable that the *cold dash*, under some circumstances, as is recommended in some cases of congestive fever, in cases attended with great restlessness, oppression, and anxiety, might be of much service in bringing about reaction, and otherwise contributing to the relief of the patient.

After *reaction* has been brought about, I would recommend the continuance of the quinine, in doses of from four to six or eight grains, three or five times a day, for several days; and laudanum, from one to three times a day, or as circumstances require, to prevent relapse and insure recovery. If a *febrile condition*, to any extent, should exist at this time, a few grains of blue mass, or five to eight grains of calomel, once or twice a day, may be advisable. If the febrile reaction should be too great (which, however, is rarely to be expected), with too much determination to the head, it may be controlled by pouring cold water freely over the head and neck;

and, if the general surface be hot and dry, it should be sponged occasionally with cool or tepid water. Blood-letting is rarely necessary, and, when resorted to, should be practiced with great caution. During this febrile condition, the patient should also be allowed ice or cold water to allay thirst, taken in moderate quantities frequently repeated.

If *acidity* of the stomach occurs, which is said often to take place the second day, in malignant attacks, the infusion of a little bicarbonate of soda or potash, in a mixture of water and an equal quantity of compound tincture of cardamoms, or tincture of cinnamon—or these antacids may otherwise be taken—will fulfil this indication, as these will neutralize the superabundant acid. Ammonia, or other alkalies, may be used for the same purpose; but it should be borne in mind that ammonia is stimulant, and where there is febrile excitement, unless it be of a low grade, its use is contraindicated.

If quinine is not at hand, or to be had, give strong decoctions or tinctures of the following articles in its stead, namely: Peruvian bark, dogwood, cherry tree, willow, poplar, the bruised leaves of the American holly, gentian, salicine, chiniodine, quassia, or other bitter tonics that are used in ague and fever.

The condition of the system imperatively demands that nourishment should receive special attention. Too much diet, or that which the stomach cannot digest, or which disagrees with it, must not be given, as such a course would have a tendency still more to depress and debilitate the system. Wine whey; chicken, beef, or mutton soup, or the like, ought to be regularly given every three or four hours; which articles should be made palatable and cordial with salt, pepper, and, in cases of great prostration, the addition of a little wine. Rice and chicken soup is probably as good as any other prepara-

tion of diet. Boiled milk, sago, tapioca, panada, and the like, may also answer a good purpose as nutrients.

REMARKS.—It is well known that different articles may induce a similar condition of the system; thus, cold water, drank when overheated, may produce colic; so also may undigestible food taken into the stomach. Overfatigue and starvation, or poisonous substances inhaled, or taken into the stomach, may produce a similar febrile condition of the system; and so also may a splinter stuck under the nail, or in the flesh. A severe shock to the body may produce chilliness and paleness, analogous to the first stage of an intermittent or congestive attack of fever. And, be the cause of cholera and congestive chills the same or not, the symptoms of the former are as analogous to those of *one form of congestive chill*, as those of any two diseases, or even the same disease in different persons; and, in my humble opinion, it should be treated on the same general principles. In this form of congestive chills, there are copious watery evacuations from the bowels, cold extremities, coldness, and shrinking of the general surface, so that rings on the fingers become loose; there are great prostration, anorexia; cramps of the stomach, calves of the legs, abdomen, &c.: vomiting, thirst, great restlessness; the pulse small and weak, or perhaps scarcely or not at all perceptible at the wrist; the features are contracted; and the extremities, and general surface in some cases, become bluish, analogous to that which is observed in the collapsed or blue stage of cholera. Indeed, the symptoms are almost, or quite identical, with, perhaps, the exception, that, in the severest forms of cholera, they may be somewhat more intense than is usually the case in the above-mentioned variety of congestive chill. This form of congestive chill is not only well known to the physicians

of the southern and southwestern States, those of India and elsewhere, but it appears to have been known to the ancient Greeks.

In corroboration of the plan of treatment I have laid down, and the remarks already made, I may mention that, from what I have been able to learn, the quinine and opiate treatment adopted in some portions of the southwestern States, when the epidemic cholera visited this country before, though no doubt far too feebly practiced, was eminently successful. And though I disapprove of the plan of treatment recommended by Dr. Cartwright, of Natchez, Mississippi, and which, indeed, has already proved to be unsuccessful; the following remarks by him, published in the *New Orleans Medical and Surgical Journal*, tend to corroborate the remarks I have made above: "The practice that was found to be the most successful in the southwest, in the epidemic Asiatic cholera, has never, to this day, been dignified with any notice (except a trivial one in Boston), in any medical book or medical journal since published.

"Dr. Bell, in his elaborate chapters on cholera, mentions almost every practice and mode of treatment, except that which experience in his own country proved to be most successful. It was an American practice, built on a Grecian precedent, but it happened to be directly contradictory to the physiological and fashionable batch of theories, which were last imported from Europe. It is a practice not only successful in arresting watery evacuations in cholera, but also in congestive fever, with almost as much certainty and safety as quinine arrests an intermittent. It was only noticed in Boston, to sink its author in the estimation of the profession, as one acting without authority, and setting all law and gospel in medicine at defiance. The translation of Hippocrates into the English language will prove to the medical pro-

profession, that the author has the soundest philosophy, and the very highest authority, for the objectionable remedies he used in cholera, and still uses in congestive fevers, of any known in medicine."

In conclusion, I will refer to a fact communicated to me by a gentleman whose acquaintance I recently made at Tuscumbia, Alabama, and who is not a physician. He stated that, while on a visit to New Orleans, during the recent epidemic, a friend of his was in the last stage of cholera; that is, he was cold, his features contracted, pulseless, and apparently almost lifeless. It struck him that this condition was analogous to that of a congestive chill; and, knowing very large doses of quinine to be successful in the latter, he concluded to resort freely to it in the case of cholera before him. He threw it into the man in very large doses, without being particular as to the amount, so he gave enough, and in addition, used external frictions with mustard, &c. It was not long before the pulse could be felt at the wrist, warmth was restored to the general surface, and the patient soon recovered. It should be mentioned that the other remedies had no influence, apparently, till the quinine increased the vitality of the system.

I notice, in the May number of the *New Orleans Medical Journal*, that Gilman M. Peck, M.D., after using the usual articles (for they are not, perhaps, entitled to the appellation of remedies) till his patient was nearly dead, gave him at once twenty grains of quinine, with twenty-five grains of calomel, with the happy result of soon seeing returning warmth, and rapid improvement in all the symptoms, and a speedy recovery. Who can hesitate to attribute this to the quinine? The quinine was also subsequently repeated, several times. In this case, the external irritating or stimulating applications had no perceptible effect till the

vitality of the general surface was increased by the quinine.

*July 6, 1849.*—Since writing the above, the cholera has appeared in New York, Philadelphia, and several other cities of the United States. It is prevailing with great malignity at Cincinnati and St. Louis; and also in Paris, France.

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## CHAPTER XXIV.

### CROUP. (CYNANCHE TRACHEALIS.)

It was not my intention to write a chapter on *Croup*; but it has occurred to me that this book will fall into the hands of many who may be distantly situated from a physician. When this is the case, the disease often being rapid in its progress, the little sufferer is, in many cases, either dead before the aid of a doctor can be procured, or perhaps beyond the power of the healing art when he arrives. These circumstances, and the sometimes insidious attacks, which do not sufficiently early attract the attention of parents, are well known, by practitioners in the thinly settled regions of the South, to be the causes of not unfrequent fatal terminations in croup. From these considerations, and in order that this work may be more useful to the public, I have noticed this disease more for their benefit than for that of physicians (except young ones and students), who, it is presumed, are generally as familiar with the nature and treatment of the disease as is the author.

Croup is sometimes called by the old women, "*bold hives*," or "*hives*;" they also call some breaking out on the skin, or some cutaneous affections, "*hives*;" as, for instance, the papular eruption of very young infants, known among physicians by the name of *strophulus*. This is unfortunate, as this uncertain nomenclature often leads many of them to give remedies that are not adapted to the one or the other affection.

Perhaps I cannot better describe an attack of croup than by the following extract from Dr. Eberle's work on the practice of medicine.

"SYMPTOMS.—This disease sometimes comes on suddenly, and acquires the utmost degree of violence in the course of a few hours. More commonly, however, its approach is gradual, the first symptoms being those of ordinary pulmonary catarrh. A dry and hoarse cough, with slight difficulty of breathing, and a change of the voice, are generally the first intimations of its invasion. This very peculiar hoarse and rough cough, with its accompanying slightly oppressed breathing continues sometimes, with occasional remissions, for several days before the disease assumes its characteristic form and violence. More or less febrile excitement is generally present from the very commencement of the disease. Sooner or later the respiration becomes more difficult and distressing; the febrile reaction rises higher; the voice becomes indistinct, whispering, or annulled; slight pain and uneasiness are felt in the larynx, and the cough becomes more sonorous. The disease now advances rapidly to its state of full development, and all the symptoms acquire a most alarming and distressing degree of violence. The countenance is flushed; the eyes prominent, injected, and heavy; the pulse frequent, tense, and

quick; the skin dry and hot; and the respiration extremely difficult and anxious. *Inspiration* is especially difficult, and accompanied with a very peculiar ringing or stridulous sound," which has been likened to the crowing of a young cock, or the barking of a dog. "The cough, at this time, is often quite dry; but, in some instances, there is a copious and very tenacious albuminoid fluid secreted in the larynx and trachea, from the very onset of the disease; and, in all cases, this viscid secretion occurs in the advanced stage of the malady. If the disease be not checked in its violence and progress, the breathing acquires at last a degree of oppression inexpressibly distressing; the little patient manifests, in the expression of its countenance and actions, the utmost degree of anguish and suffering; the head is thrown backwards, and the mouth kept open; the eyes are half closed, or cast about with an imploring expression for relief; the voice is extinct; the lips livid," and, perhaps, lividity also appears around the eyes, and on a portion of the fingers about the nails; "the face pale, and covered with large drops of sweat," in many instances; "sensitivity rapidly diminishes; slight coma ensues; the extremities become cold and clammy; and, finally, breathing stops, and closes the agonizing scene.

"Such are the ordinary course and symptoms of this frightful malady. Much diversity, however, occurs in relation to the degree of violence and rapidity of these phenomena. In some instances, not more than a few hours elapse between the commencement and fatal termination of the disease. In other cases, the symptoms proceed slowly to their acme, and the disease is protracted for many days, and occasionally, even for several weeks, assuming a chronic character, without, perhaps, having at any time, manifested a very alarming degree of vio-

lence. The ordinary period occupied by the disease is from two to five days."

In most instances, occurring in the South, perhaps there is not that degree of febrile excitement described by more northern authors; the pulse not being so hard and tense, though increased in frequency. In most cases there is a copious, nearly transparent, semi-transparent, viscid mucus secreted, which greatly interferes with respiration, and which may cause the death of the little sufferer, unless it be relieved of it. In some instances, a false membrane is formed in the windpipe, which is apt to produce death. In these cases, the cough and respiration are *dry*, instead of humid, as in the above variety. There is exacerbation in the difficulty of breathing; that is, it is sometimes worse, and then again there is some temporary amelioration: it is, also, usually worse once a day, in those cases that last for several days, manifesting a periodical recurrence, which is most apt to take place in the early part of the night, like the bronchitis of children.

*Spasmodic croup* (*Laryngismus stridulus*) is more strictly of a *periodical* nature than the above, the paroxysms usually, if not invariably, making their appearance at night. Professor Dunglison describes this form or variety of croup as follows: "A disease of infants, characterized by suspension of respiration at intervals; great difficulty of breathing, especially on waking, swallowing, or crying, ending often in a fit of suffocation with convulsions. The ear, on auscultation, at a distance from the chest, detects an incomplete, acute, hissing inspiration, or rather cry; whilst the expiration and voice are croupal, both at the accession and termination of the paroxysm. The heart's action has been observed to be distinct and feeble," the pulse small and contracted.

"These symptoms are often accompanied by rigidity

of the fingers and toes; the thumb being frequently drawn forcibly into the palm of the clinched hand." Spasmodic croup makes its appearance suddenly, being seldom preceded by catarrhal symptoms, or only for a short time. In this form of croup, the child may have no fever, or but to a slight degree; or, indeed, its extremities may be cool; it may be relieved of an attack one night, run about, appearing well, or nearly so, the ensuing day, and be attacked again the next night, and soon.

**PATHOLOGY.**—The first variety of croup noticed above is regarded as a highly inflammatory disease, the local affection consisting of inflammation of the lining (mucous) membrane of the windpipe (trachea). It is the opinion of some that this inflammation usually, or often, commences about the tonsils, fauces, or larynx, and descends into the windpipe, and frequently into the bronchia; thus, in such cases, producing bronchitis at the same time, which renders the affection vastly more dangerous. At the onset, perhaps, the extent to which the nervous system or cerebro-spinal axis is involved, is too much overlooked.

The *second variety, spasmodic or nervous croup*, may, perhaps, with propriety be regarded as a *nervous affection*, depending on irritation of the cerebro-spinal axis, which may be primary, or caused by sympathy from irritation of the stomach and bowels, &c.

"It may be observed, that the immediate cause of the distressing difficulty of respiration, and, finally, of death, consists in an obstruction to the passage of the air into the lungs. The circumstances which cause the exclusion of the air from the lungs, consist either in a spasmodic closure of the glottis, or in an occlusion of this aperture by tumefaction of its sides, or by the formation of false membrane or a mass of concreted lymph, or, finally, by

an excessive quantity of a very ropy and viscid mucus closing up the passage. Death is also sometimes the immediate consequence of an effusion into, and consequent choking up of the bronchial cells, a mode of termination which almost always occurs when the inflammation descends into the bronchial ramifications. Spasmodic contraction and closure of the glottis may be caused by irritation excited by the upper portion of the false membrane."—(*Eberle*.)

CAUSES.—The cold, damp, variable weather, common in autumn or spring, is considered as the most frequent cause of croup, which may also be favored in its effect by the fashion of leaving the neck and upper portion of the chest perfectly bare; however, if children are accustomed to going dressed in this manner, and otherwise lightly clad, if the weather is mild, perhaps this does not exercise so much influence in producing the disease, as has been imagined. The system seems to be more liable to be attacked with croup, from the influence of cold, during convalescence from measles, scarlet fever, &c. It also appears that this disease is more frequent during the prevalence of these diseases, and also during that of whooping-cough (*Pertussis*). The children of some families are much more liable to the disease than others. Robust, very fat children are generally more liable to it, though it is by no means confined to them. Children over eight months old, and under five or six years, are more liable to be attacked with croup, though younger infants, or older children, or even adults, may be, but this is rarely the case. Children that have once had the disease, are more liable to be attacked again and again.

According to the author's observation, *nervous* or *spas-*

*modic croup* is much more common in low or swampy, or what is generally regarded as malarious regions of country, where intermittents and typhoid pneumonia prevail; and, as before remarked, cases of this kind are more especially apt to make their appearance in the early part of the night. It is, however, said to be of frequent occurrence elsewhere.

**TREATMENT.**—In the first variety of croup, noticed above, the chief indications are, to subdue the local inflammation, the febrile condition, and to procure the discharge of the copious, viscid, coagulable, semi-transparent, and sometimes frothy mucus, which collects in the air passages, and which renders respiration more and more difficult as it accumulates, or lodges in the upper portion of the windpipe, and which, if not removed, may produce death by suffocation, by preventing the ingress of air into the lungs.

When the attack is of the most violent inflammatory form, distinguished medical authors consider prompt and decisive general *blood-letting*, in the early period of the disease, as being absolutely imperative and indispensable; while, later in the disease, it may be of doubtful efficacy, or even detrimental. The amount of blood to be drawn must depend on the age and constitution of the patient and the violence of the disease, and can better be judged of by the effect it produces; as, when paleness of the lips or face, fainting, or free perspiration occurs, the flow of blood should be arrested. It is frequently somewhat difficult to bleed children, especially those that are fat, on account of the deepness or obscurity of the veins. Fortunately, however, if the disease be promptly attacked in its incipient stages, with the proper remedies, blood-letting is rarely necessary. If it should be practiced, and the symptoms subsequently seem to

demand a repetition of it, it will usually be more advisable to resort to local blood-letting, by means of leeches applied to the throat, and the nauseating influence of lobelia inflata, or tartar emetic; indeed, if these articles, or either of them, is early and promptly given, blood-letting, in a large majority, if not all cases, may be entirely dispensed with. If parents would early resort to either of these articles, the disease might generally be easily controlled, but if it is suffered to run its course for some time, the best directed efforts of a physician may be ineffectual. I would, therefore, insist that parents lose no time in promptly attending to the early stages of this affection. If a physician is convenient, call him in immediately; if not, give an emetic of lobelia or tartar emetic,\* or ipecac., and after free vomiting has been induced, give a dose of calomel, say from three to six or eight grains. The system should now be kept under the slightly nauseating influence of small doses of lobelia and ipecac., or tartar emetic and ipecac., repeated every hour, or more or less frequently, according to the severity of the disease and the influence of these remedies. The vomiting causes a discharge of the viscid, tough mucus which accumulates in the air passages, especially about the upper portion of the windpipe, and the little patient is now greatly relieved in every respect, the breathing being more free and easy. If the breathing should again become laborious, a mixture of ipecac. with lobelia or tartar emetic, should be given, so as again to nauseate and produce vomiting. This course should be resorted to again and again, as the tough mucus, to any considerable extent, impedes or impairs the freedom of respiration.

\* When tartar emetic is given to young children, it will be advisable to add some paregoric to the solution, to prevent too much griping and irritation of the stomach and bowels.

After the second or third vomiting, if necessary to resort to it again, it will generally be advisable to use ipecac. In twelve or twenty-four hours, if the disease is not almost entirely removed, it may be well to repeat the dose of calomel. If the medicine should purge too severely, it should be moderated with a little paregoric, from five to fifteen drops, according to the age of the patient, if under six years of age. As to local applications, I do not place much reliance upon them; a piece of flannel dipped in spirits turpentine, and applied to the throat till it produces a burning sensation; or a snuff plaster, applied to the same place; or, the application of a garlic or onion poultice may afford some relief. As the disease subsides, from five to twelve drops of Coxe's hive syrup, four or six times a day, or if this is not at hand, small doses (from half a grain to a grain) of ipecac., or the decoction or infusion of boneset, may be given in such quantities as to produce slight nausea, and a gentle or slight moisture of the skin, to insure recovery, and prevent a return of the disease. Two or three free evacuations from the bowels should be procured at the onset of the disease, during the period of febrile excitement; after which, one or two operations daily are usually sufficient; as active purging at this time would do harm, by exhausting the system.

After the febrile excitement has been reduced by vomiting, and the other means that may have been thought proper, and a *remission* brought about, I have found quinine in free doses (from two to five grains, according to the age of the patient), repeated three or four times a day, superior to anything else in putting a check to the further progress of the disease; not neglecting, however, the use of such other articles as the symptoms may require. My experience with quinine, in croup, has not been extensive enough to ascertain to what extent it

may be profitably given, as I have generally pursued the treatment recommended by authors; but from the known influence of quinine, when given in free doses, in arresting inflammation in its incipient stages, in other organs, attended with febrile excitement, and from analogy, I am inclined to believe that if, soon after free vomiting was induced, a good-sized dose of quinine was given, with the dose of calomel that is above recommended, at this time, it would have a powerful influence in putting a stop to the disease. Opiates at this time are often of much service, and are, perhaps, too seldom exhibited.

“In the advanced periods of the disease, there exists often so much torpor or insensibility of the system, in consequence of the imperfect decarbonization of the blood and vascular congestion in the brain, that great difficulty is experienced in procuring the operation of emetics. To obviate this gastric insensibility, and procure emesis, we must endeavor to diminish the sanguineous congestion in the head; and this may, in general, be readily accomplished,” except when near the fatal termination, “by putting the patient’s feet in warm water, and applying a napkin, wet with very cold water, to the head. The abstraction of blood, too, while the patient is supported in a sitting or erect posture, will rarely fail to insure the operation of an emetic under the circumstances in question.” (*Eberle.*)

In the early stages of the disease, when the skin is hot and dry, the *warm* or *tepid bath* is recommended by some authors, and it may be of benefit, under these circumstances, but I do not think that much reliance should be placed in it. Never having tried it, I would not here recommend the cold or shower bath, or the pouring cold water over the body, as is particularly enjoined in the inflammatory or second variety of re-

mittent fever; but in the early stage of highly inflammatory croup, when the skin is hot and dry, the face flushed, and the pulse full and hard, I am inclined to believe that the application of cold water, in the manner above mentioned, so as to control the febrile excitement, and probably also tend to relieve the local inflammation, would be of much service. I think these suggestions are worthy of being tested by the profession. In this form, tartar emetic is probably superior to any other article. The system should be kept under its emetic and nauseating influence till the excitement is subdued, and used to a less extent subsequently.

In the latter stage of the disease, or after it has lost its acute inflammatory character, if viscid accumulations clog the upper portion of the windpipe, and an emetic is necessary to remove them, some of the following articles should be selected; viz., ipecacuanha, boneset, syrup of squills, solution of common salt (in warm water), mustard, alum, white vitriol (*sulph. zinc*), blue stone (*sulph. copper*). Some authors speak favorably of the seneka snake-root (*polygala senega*). The late Dr. Eberle says, "After the complaint has been, in some degree, subdued, or lost its acute inflammatory character, its influence is often conspicuously beneficial. For the removal of the dry and hoarse cough, and slight oppression of the respiration, which, in some instances, remain after the inflammation has been subdued, we possess no remedy equal in usefulness to the polygala. It is, moreover, a decidedly useful remedy in all instances of chronic croupy affections, and in the catarrhal and pectoral affections which remain as the sequela of this and other acute affections of the respiratory organs. It is best given in decoction. An ounce of the root to a pint of boiling water, suffered to simmer for fifteen or twenty minutes,

and afterwards sweetened with honey. The dose of this is about an ounce (two tablespoonfuls) every hour or two, according to the urgency of the symptoms." In this latter stage, perhaps, puccoon or blood-root would be equally or more efficacious, and rendered more so, by the addition of a little sulphate of zinc and paregoric. To an infusion or tincture of the puccoon, an equal portion, or one-third of paregoric, may be added, and ten or fifteen drops given in a little milk, every two or three hours, till sufficient relief is obtained; after which a dose, three or four times a day, or less frequently, as the disease subsides, may suffice. If the zinc be added, a dose of the solution should contain about one-twelfth of a grain of this article. After the mixture is made, it may be sweetened with honey or sugar.

Some authors, within the last few years, maintaining that the inflammation generally commences about the tonsils or fauces, and extends to the larynx and windpipe, and, in some cases, into the bronchia, insist on the importance of the early application of a strong solution of lunar caustic (from twelve to twenty grains to the ounce of water) to the inflamed surface of the tonsils, palate, uvula, &c., so as to arrest the disease in its incipient stages, before the inflammation extends into the larynx and windpipe. There are but few, however, except physicians, who have sufficient knowledge to apply this properly. It may be done with a fine camel's hair pencil, or a small piece of sponge, tied to a stick or whalebone.

In those cases in which a *false membrane* has formed, lining the windpipe, but little hopes are usually entertained of a favorable result. In rare instances, emetics may cause its expulsion. Tracheotomy, laryngotomy, or cutting into the windpipe or larynx, so as to be able

to extract the false membrane, and allow the child to breathe, is an operation that has been performed as a *dernier resort*, but generally without success, and therefore considered of doubtful propriety. If my recollection serves me correctly, I heard Professor J. M. Bush, M.D., of Transylvania University, say that one of his children was attacked with croup, in which the membranous formation took place. He called in Professor B. W. Dudley, who opened the child's mouth, and, perceiving the upper portion of the deciduous membrane, immediately caught hold of and extracted it, and the child soon recovered.

Dr. CHARLES D. MEIGS reports a case of croup, in which the false membrane had formed. After other ineffectual means were resorted to, as a *dernier resort*, in the advanced stage of the disease, *tracheotomy* was performed by Dr. Pancoast, and the child recovered. "After laying bare the trachea, he divided the second, third, and fourth cartilaginous rings; immediately upon opening the trachea, a discharge took place of mucus, mixed with blood and portions of plastic lymph. In forty seconds, the child breathed with great freedom. The next day the child was up and running about." An elliptical portion of cartilage was cut from the trachea, so as to keep an opening through it, and the edges of the soft parts were kept apart by a leaden wire—with hooked ends—which passed around the neck. For further particulars in relation to this case, see the *American Journal of the Medical Sciences*, Oct. 1848.

*Nervous* or *spasmodic croup* is the most common form in the South, and perhaps also elsewhere. It is usually very easily controlled by the exhibition of an emetic, of which lobelia is probably the best, given alone, or combined with ipecac. Any of the other emetics may be used, the tartar emetic, however, being unnecessarily violent, in most cases, unless paregoric be added to the

solution, and perhaps even then. Shortly after the operation of an emetic, the exhibition of two grains of calomel, in many instances, may be of service unless the attack be very slight, in which case it may be dispensed with. A recurrence of the attack may be prevented by quinine, in doses of one, two, or three grains, two or three times a day, for a few days. This is the form of croup in which the old women procure relief by the exhibition of onion juice, and similar articles. The syrup of puccoon, zinc, and paregoric, above mentioned, three times a day, would also probably answer well to avert a return of it. If this variety is caused by worms or other irritating matters in the stomach or bowels, these should be removed by emetics, mild cathartics, or anthelmintics in the case of worms. In this latter condition, give first two or three grains of calomel, after the operation of an emetic, as above advised; and, after it operates on the bowels, Jerusalem oak, pinkroot, china root, spirit of turpentine, or other worm medicines should be given.

In *addition* to what has already been said in relation to the application of lunar caustic to the larynx in croup, I find the following in the January No. of the *American Journal of the Medical Sciences*, for 1848.

*“Croup cured by cauterizing the larynx with a solution of the nitrate of silver.”*—Dr. Latour was sent for to a child of four years old, ill of sore-throat, accompanied with a hoarse cough, fever, anxiety, and other severe symptoms, the uvula and right tonsil being covered with very adherent false membranes. Nitrate of silver in the solid form was immediately applied to all the afflicted parts within reach, and a vomit was given, by which some fragments of false membrane were brought away. Next day, the false membrane had not covered the left tonsil, but appeared to have extended downwards, and the larynx seemed to be involved in the disease, as there

was a suppressed hissing cough, and a loss of voice. Objecting, as insufficient, to the usual method of applying the nitrate of silver in such cases, namely, by introducing into the back part of the throat a sponge dipped in the solution of the salt, Dr. L. determined to use a stronger solution, between seven and eight grains to the ounce of water, and to adopt a method of applying it which he had already published in the '*Clinique des Hôpitaux des Enfants*.' This consists in saturating a strong ball of lint in the solution, and conveying it to the opening of the larynx by means of a long, curved pair of forceps, and then squeezing out the solution by compressing the ball between the blades. In this manner, the solution was applied in the case referred to every eight hours, for four days, with complete success; the voice was first restored, and then the convalescence soon became complete."\*

\* From Gazette Médicale de Paris, August 21, 1847.



## APPENDIX.

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### I.

#### CLAP. (GONORRHŒA.)

My object is briefly to notice the subject of *Clap*, from the fact of its being so often improperly treated, which renders it difficult to cure, sometimes producing stricture, enlarged prostate, affecting the bladder, &c., and also exercising a deleterious influence on the general system.

The clap usually manifests itself in three or four days after an impure connection, but in some cases it makes its appearance much sooner, and in others, again, several days later. "At first, a disagreeable itching or prickling sensation is felt in the point of the urethra, passing a short distance up from the orifice, which, on examination, will be found slightly reddened and somewhat tender. After this sensation has continued for ten or twelve hours, the mouth of the urethra becomes sensibly inflamed and swollen, and a limpid or yellowish matter begins to ooze from it. The stinging and itching increase, and the emission of urine occasions a severe smarting and burning pain in the anterior portion of the urethra. The pain, now, extends more or less speedily inwards along the urethra; the glans penis become swollen, dark red, and tender to the touch, and the discharge acquires a yellow-greenish color, resembling diluted pus. Frequent and

very painful erections harass the patient, more especially after he has been some time in bed; and on passing water the stream is forked, and the pain, in some instances, is exceedingly smarting.”—(*Eberle*.) At this stage of the disease, when the erections, or *chordee*, are painful and troublesome, a small quantity of blood is occasionally mixed with the discharge from the urethra, “and the prepuce sometimes becomes much inflamed, tumid, and slightly excoriated at the edges, and in spots on its internal surface. Many patients experience a constant aching pain in the glands and body of the penis, and occasionally one or both testicles become tender, inflamed, and much swollen, attended with pain along the whole course of the spermatic cord. Considerable symptomatic fever always attends, when the inflammation becomes thus extended from the urethra to the neighboring structures. Not unfrequently the whole track of the urethra becomes inflamed, giving rise to harassing sensations of burning and titillation in the neck of the bladder and anus, and very severe cutting pains in the perineum on making water. The patient, under these circumstances, feels a continual urgency to make water, but from the great tenderness of the neck of the bladder and urethra, only a few scalding drops are voided at a time. When the testicles become inflamed, the gonorrhœal discharge is always sensibly diminished, and in many cases entirely suppressed. Sometimes some of the engorged capillaries of the mucous membrane burst, and more or less pure blood passes off. After an uncertain period, these inflammatory symptoms begin to subside. The scalding pain in making water gradually ceases, the erections become less frequent and painful, and the gonorrhœal matter acquires a greater consistence, and becomes white and ropy.

“The specific inflammation of gonorrhœa is primarily

seated in the mucous membrane of the urethra, a short distance above its orifice in the *fossa navicularis*, and chiefly affects the *lacunæ mucosæ* of Morgagni, and their excretory ducts. From this point, however, it often extends higher up the urethra, to the membranous portion, the veru montanum, and neck of the bladder.

“ Sometimes the gonorrhœal matter, in the first instance, does not penetrate the urethra during impure venereal connection, but, being applied to the glans penis, it gives rise to irritation and a discharge of thin, purulent matter from the sebaceous glands situated around the corona glandis.”—(*Eberle*.)

In *women*, gonorrhœa, in many instances, produces but little irritation, pain, uneasiness, or excitement.—*Eberle* says, that “ Women, affected with gonorrhœa, generally experience a disagreeable itching and titillation, about the orifice of the vagina, and at the raphe. In severe cases, the labia, nymphæ, and clitoris, become swollen and extremely tender; and there is, generally, a severe burning and stinging pain felt in voiding the urine. In violent instances of the disease, there is a constant aching pain, experienced in the bladder, womb, groins, and back; and the upper and inner surface of the thighs often becomes inflamed, excoriated, or covered with an inflamed pustular eruption, from the irritation occasioned by the gonorrhœal discharge.”

What is called the *inflammatory stage* of clap, usually lasts six or eight days, or even longer, in some cases. After this period, the discharges from the urethra may become even more copious than previously, and are of the appearance of cream, to which, sometimes, there is a greenish tinge. Now, the discharges are commonly attended with little or no pain, perhaps a slight burning sensation at the time of voiding urine, and for a short

time afterwards ; and the disease, in many instances, assumes a chronic character, usually called *gleet*.

**TREATMENT.**—During the *inflammatory stage*, the treatment should be *antiphlogistic* ; therefore, as soon as one is attacked with clap, if he is of a full, sanguine temperament, young and vigorous, he should be immediately bled to a moderate extent ; but, whether or not bleeding is now resorted to, he should be freely purged, and his stomach kept nauseated. For these purposes, he may commence by taking ten grains of calomel with ten grains of jalap, or twenty grains of rhubarb, with the addition of a quarter of a grain of tartar emetic, or a teaspoonful of the tincture of lobelia, or two or three grains of ipecacuanha. These latter articles, for the purpose of producing nausea, should be repeated every two or three hours, and the dose increased or diminished, according to their effect ; indeed, if the nausea were carried to the extent of causing vomiting once a day, the disease would be more promptly controlled. Twenty-four hours after taking the first dose of calomel, as above noticed, the bowels having been freely purged, a second dose of six or eight grains should be given ; after which, they may be kept loose by the use of the nauseants above mentioned ; and, if necessary, the additional use of cream of tartar. This may be dissolved in a mucilaginous solution, as of gum Arabic, flaxseed, slippery elm, benne, &c., and drunk occasionally or frequently through the day, so as to keep the bowels open ; or a dose of two or three teaspoonfuls or more may be taken at once, dissolved, as above mentioned ; or it may be dissolved in warm water, and, if desired, sweetened. Other cathartics may be selected and used instead of this. This treatment should be persevered in till the inflammatory stage of the disease has subsided.

As to *local* treatment, in the mean time, Professor B. W. Dudley, M. D., recommends the frequent application of warm water, which may be done by sitting in or over the vessel containing it, and frequently throwing the water upon the genitals. For the relief of the painful erections at night, the warm water may occasionally be applied; or a soft opiate poultice may procure some relief; as of Jimpson-weed leaves, nightshade, opium; or an ointment of morphine, or camphor and mercurial ointment. The parts should be kept clean, by washing them three or four times a day in weak tepid soap-suds. A clean piece of cotton cloth should be worn over the genitals, which ought to be changed for another twice or thrice a day, or as often as it becomes soiled with the gonorrhœal discharges.

During the first six or eight days, or the inflammatory stage, the affected individual should live very abstemiously, as upon small quantities of gruel, weak soup, panada, rice soup, and the like. Stimulants of all kinds should be eschewed. The individual should also avoid exercise, keep quiet, and remain mostly in a horizontal position, as upon a bed, sofa, &c.

Unfortunately during this stage it is too common, both amongst those afflicted with the disease and physicians, to give balsam copaiva and other stimulating diuretics, and also to throw stimulating astringent injections into the urethra, often thus making the disease worse—more painful, distressing, protracted, difficult to cure—and also sometimes producing swelling of one or both testicles, stricture, &c.

After the *acute* or *inflammatory stage* has passed off, balsam copaiva, cubebs or turpentine, should be freely given three times a day in mucilaginous solution, or mixed with sugar. The following formula will answer a good purpose at this time:—

|                         |                   |
|-------------------------|-------------------|
| R. Balsam copaiva       | two fluidounces;  |
| Sulphate of zinc        | half a drachm;    |
| Gum Arabic, pulverized, | a tablespoonful;  |
| Water                   | four fluidounces. |

Dissolve the zinc in the water, add the gum Arabic, and then the balsam copaiva, and shake it well just before using it. Dose, from a dessertspoonful to a tablespoonful three times a day. If it should operate too much on the bowels, half an ounce of laudanum should be added to the mixture. It may be taken alone or mixed with sugar; or, if it is not convenient to prepare the above, from forty to sixty drops, or near a teaspoonful of the balsam copaiva, may be mixed with sugar, and thus taken. Dr. Eberle says the following is an excellent formula for administering this article:—

|                                           |                |
|-------------------------------------------|----------------|
| R. Balsam copaiva                         | one ounce;     |
| Sweet spirit of nitre                     | half an ounce; |
| Laudanum, and spirit of camphor, of each, | one drachm.    |

Mix. Of this, a teaspoonful should be taken four times daily.

When the disease assumes a *chronic* or *gleety* character, spirit of turpentine, or cubebs, should be mixed with the balsam copaiva, in the proportion of equal quantities of the former, or tincture of cubebs, and the balsam; or, the first two may be mixed together in equal quantities, and given in teaspoonful doses, three or four times a day, mixed with a little sugar. In cases of this kind, I am inclined to think favorably of the addition of tincture of puccoon root and a solution of sulphate of zinc to the mixture of balsam and turpentine.

The use of the above means should be continued till the discharge ceases; after which, the doses should be gradually diminished for six, eight, or ten days; when, if there is no appearance of the gonorrhœal discharge, the individual may consider himself cured, though he

should live temperately, avoiding too much exercise or excessive venereal indulgence, for fear that the disease might again be developed; and this is the more imperative, if the individual has had it before.

If the clap is disposed to yield to the above means, no injections into the urethra, of any kind, should be used; but, if it is rather obstinate, a silver bougie should be smeared with balsam copaiva, and introduced three times a day; or, in obstinate cases, twenty grains of lunar caustic, pulverized finely, and rubbed up, or intimately mixed with half an ounce of lard, or citrine ointment, smeared on the bougie, may be used in the same manner. Weak solutions of sulphate of zinc, lunar caustic, sugar of lead, oil of vitriol, or sulphate of copper, may be injected into the urethra, instead of the above; but care is requisite that they be of the proper strength, and carefully injected, so that the solution may come in contact with the diseased surface, and that the end of the syringe do not touch the diseased urethra so as to excite increased irritation and inflammation. The following is the proportion in which these articles may be added to an ounce of water, using the weaker solutions first; as the disease becomes more protracted, or chronic, the strength should be increased; *sulphate of zinc*, from a grain and a half to eight grains; *lunar caustic*, from one to six grains; *sugar of lead*, from three to eight grains; *oil of vitriol*, a drop to a drop and a half; *sulphate of copper*, from one to four grains.

Dr. Eberle very correctly observes "that, where there is much irritability or active inflammation of the urethra present, all astringent or irritating injections are highly improper. When used under circumstances of this kind, they are apt to give rise to various distressing affections, particularly to obstinate chordee, inflammation of the body of the penis, of the neck of the bladder, and of the

testes, and to strictures in the urethra." It should also be borne in mind that these secondary results may take place in cases in which no injections have been used, if the proper treatment has been neglected.

The bowels should be kept gently open by aperients, of which blue mass or calomel should constitute a part, if any of the secondary conditions above mentioned exist. Minute doses of corrosive sublimate, with extract of cicuta, are favorably spoken of by some authors. When one or both testicles are swelled and painful, an emetic should be given, and the testes enveloped in a plaster made of mercurial ointment and camphor. In cases of enlarged prostate, iodine and mercurial ointments should alternately be rubbed over it twice a day.

The general treatment recommended above is also applicable to females, though in them it usually need not be quite so active. During the inflammatory stage, the parts should be frequently bathed or sponged with tepid water, and also kept clean by injecting weak soap-suds into the vagina three or four times a day, after which a weak solution of sugar of lead may be thrown into it.

After the acute stage has passed by, any of the aforementioned injections recommended for the male are proper, and should be repeated three or four times a day. If the disease extends into the urethra, a silver bougie should be smeared with balsam copaiva, or some of the articles mentioned heretofore, and introduced into it twice or thrice a day.

In chronic cases, muriated tincture of iron, or iodine, is sometimes of much service. The diet should be light, in the early stages of this form, but, subsequently, it may be more nourishing, especially if there is much debility; in which case tonics may be necessary.

## II.

## MISCELLANEOUS.

IT has been, and still is too common an error with many, so soon as an individual receives a severe *concussion* or *jar*—as by a fall from a height, or other severe injury, to *bleed* him *immediately*, while the pulse is very small or scarcely perceptible; the face pale, and perhaps the extremities cold.

In cases of this kind, and during this condition, stimulants should be given, if necessary; spirits of camphor, hartshorn, or ether, held to the nose; cold water sprinkled on the face frequently, and the extremities assiduously rubbed with the hands.

After *reaction* is fully established, the pulse being hard and full; the general surface and extremities warm and dry, or even hot; perhaps pain in the head; it may then be necessary to take away a moderate quantity of blood, administer a mild cathartic, and, if there is much pain in the head, it should be kept cool by the application of cold water. If the *reaction is moderate*, bleeding will be unnecessary; but the bowels should be operated on by a cathartic, as castor oil, Epsom salts, cream of tartar, extract of butternut, calomel and jalap, &c.

If the person thus injured should again relapse, stimulants should again be given; and, if the case should be protracted, quinine and other tonics may be necessary. If any degree of febrile reaction attends, the occasional use of the above cathartics, with the use also of lemonade, will probably be demanded.

## III.

## INCISED WOUNDS.

INCISED WOUNDS are those made by sharp-edged instruments; such, for instance, as an axe, drawing-knife, pocket-knife, cutlass, &c. It is so common an error amongst the people generally to treat injuries of this kind by filling the wound with ashes, sugar, soot, or other improper materials, that I wish to call their attention to the proper treatment of wounds of this sort.

As soon as possible after the occurrence of an incised wound, its edges should be drawn together and held in this position, in order that the parts may soon unite again, by what is commonly called "*healing by the first intention,*" and *without suppurating or mattering.* Before drawing the edges of the wound together, however, if there is any dirt, clotted blood, or other foreign matter in it, it should be removed. The edges may be held in apposition by adhesive plaster spread on linen, by an ethereal solution of gun-cotton, or by stitching them together; or, on certain parts, the application of a bandage may suffice for this purpose. If the plaster, or linen saturated with an ethereal solution of gun-cotton be used, the width of the strips should depend on the size of the wound, as from a quarter of an inch to an inch wide, and sufficiently long to extend some distance beyond the wound, so that it may have enough surface of skin to adhere firmly to. If the wound is in very fleshy or soft parts, and so large that its edges cannot be held in apposition by these means,

the suture should be resorted to; and, in the spaces between the stitches, the adhesive strips (either of the plaster or solution of gun cotton), should be applied.

After the wound has been treated as above, if it is disposed to bleed too much, some clean wool, dipped in a mixture of flour and water, should be applied to it. If it is on any of the limbs where a bandage can be properly applied, the bleeding may be arrested by it, taking care to commence wrapping the limb at its extremity, and firmly and smoothly encircling it to a few inches above the wound. The bandage should be two or three inches wide; and it may be profitably applied to wounds which do not bleed too much, especially those inflicted on the limbs or about the head, or anywhere else where it can be used so as to compress and firmly hold the edges of them together.

After a wound has been dressed as above, usually but little else is necessary than to cover the parts with a soft piece of folded cloth. No ashes or sugar should be thrown into it to prevent it from healing, or force it to fill up by granulation, which would, probably, require weeks or months. Let some blood remain on its edges, which serves to assist in holding the parts together, and to heal it.

If the wound is large, and the parts become considerably inflamed, hot, and painful, they should be frequently sponged with tepid or cold water, or water and vinegar; or a cool poultice, as of slippery elm, should be applied over the inflamed parts, and renewed as soon as it becomes dry.

*Lacerated, or contused wounds* should be treated like the above; in the latter, as the parts are not separated or torn asunder, the application of the bandage, and some opodeldoc, will, perhaps, be sufficient. If much inflam-

mation should ensue, attended with considerable heat and pain, a cool poultice of slippery elm, or the frequent application of tepid water, or of cool water and vinegar, if it is found to afford more relief, should be used.

As the recent discovery of "*gun cotton*," and its adhesive properties when dissolved in sulphuric ether—the solution being called "*Collodion*"—have attracted much attention, formulas for making these articles, and the uses of the latter, may be of interest to the reader.

### *Receipt for making Gun Cotton.*

Take about equal quantities of pure *sulphuric* and *nitric* acids, put them into a glass vessel (a glass tumbler, for instance), and put in as much clean cotton or cotton rags as the acids will completely saturate; let it thus remain for from three to four hours, then wash the cotton well with water, and dry it in the sun. Gun cotton is possessed of great explosive properties, and may be used as a substitute for gunpowder.

### *"Collodion," or Ethereal Solution of Gun Cotton, or prepared Cotton.*

|                            |                       |
|----------------------------|-----------------------|
| R. Gun cotton              | ten to twelve grains; |
| Commercial sulphuric ether | one ounce. Mix.       |

Mr. S. Hutchings, of Montgomery, Alabama, has prepared an ethereal solution of *prepared cotton*, which he considers superior to the Boston preparation. His formula is as follows:—

|                                      |                |
|--------------------------------------|----------------|
| R. Sulphuric acid (commercial)       | four ounces;   |
| Nitric acid (Farr's chemically pure) | two ounces;    |
| Cotton                               | three drachms. |

Mix the acids. Saturate the cotton in the mixture for six minutes; then gently press off the acids. Allow the

cotton to remain for an hour in the fumes, in a covered vessel; then wash repeatedly in water, so as to remove the slightest taste of acid, and dry thoroughly in the sun. Then,

*To make Collodion,*

Take of the prepared cotton ten to twelve grains; -  
Commercial sulphuric ether one ounce. Mix.

The cotton should be dissolved in the ether as soon as it is perfectly dry; if kept for any length of time (for instance, a week) it loses to some extent its solubility, which may be owing to its absorption of moisture from the atmosphere.

The above is a most excellent application to all incised, or lacerated wounds. It adheres with great tenacity, holds their edges together, and gives them an opportunity to heal by the *first intention*. In the language of J. Marion Sims, M. D., of Montgomery, Alabama, "In the application of the solution to common *incised wounds*, nothing more is necessary than to bring their edges into apposition, and smear the wound over with it, by means of a camel's hair pencil. But in wounds of greater magnitude, requiring sutures or straps, it will be necessary to use strips of linen or cotton fabric, of the requisite length and breadth, well moistened with the liquid. For this purpose, let one end of the strip be stuffed into the vial containing the preparation. When thoroughly saturated, let it be applied, and wait patiently till it becomes perfectly dry, which will be in from a half minute to three, four, or five, according to circumstances. The other end of the strip may now be wet and applied in like manner. In some wounds, as, for instance, after amputation, the whole strip may be saturated at once and applied over the parts. Be sure of one thing, not to feel afraid of wasting the article; and of another, not to be

in a hurry; for a failure sometimes arises from using the solution too sparingly, and again, from not waiting till it gets thoroughly dry.”\*

M. Mialhe makes collodion in the following manner:—

|                                       |                        |
|---------------------------------------|------------------------|
| R. Finely powdered nitrate of potash  | forty parts by weight; |
| Concentrated or common sulphuric acid | sixty “ “ “            |
| Carded cotton                         | two “ “ “              |

“ Mix the nitre with the sulphuric acid in a porcelain vessel, then add the cotton, and agitate the mass for *three minutes* by the aid of two glass rods.” If the sulphuric acid is weak, a longer immersion of the cotton is necessary. “ Wash the cotton, without first pressing it, in a large quantity of water, and, when all acidity is removed (indicated by litmus paper), press it firmly in a cloth. Pull it out into a loose mass, and dry it in a stove at a moderate heat.

“ The compound thus obtained is not pure fulminating cotton; it always retains a small quantity of sulphuric acid, is less inflammable than gun cotton, and it leaves a carbonaceous residue after explosion. It has, however, in a remarkable degree, the property of solubility in ether, especially when mixed with a little alcohol, and it forms therewith a very adhesive solution.”

|                           |                                 |
|---------------------------|---------------------------------|
| R. Prepared cotton        | eight parts by weight;          |
| Rectified sulphuric ether | one hundred and twenty-five do. |
| Rectified alcohol         | eight do.                       |

“ Put the cotton with the ether into a well-stopped bottle, and shake the mixture for some minutes. Then add the alcohol by degrees, and continue to shake until the whole of the liquid acquires a syrupy consistency. It may be then passed through a cloth, the residue strongly pressed, and the liquid kept in a well-secured bottle.”—(*Med. News*, Dec. 1848.)

\* New Orleans Medical and Surgical Journal, Sept. 1848.

## IV.

## WORMS IN THE ALIMENTARY CANAL.

THE most common symptoms of worms are generally pretty well understood; as a pallid or sallow complexion, with usually a fullness or protuberance of the abdomen, swelling of the upper lip, scratching of the nose and anus, grinding of the teeth, and sometimes sudden jumps or starts when the child is asleep, sometimes disagreeable or gnawing sensations in the belly, irregularity of the bowels, indigestion, fetid breath, more or less debility, and commonly anæmia; in some cases fever is produced (*worm fever*), or convulsions or other nervous affections occur; the appetite is generally variable. Worms are most common in children between the periods of weaning and puberty. A debilitated condition of the system favors their production, either in children or adults.

TREATMENT.—At the commencement, if there should be attendant fever, or a somewhat full, florid appearance, one or two doses of calomel (from two to six or eight grains, according to the age and condition of the patient) should be given, with an interval of twelve or twenty-four hours, if more than one dose is taken. After this, some of the other anthelmintics should be administered; or, if the conditions mentioned above should not be present at first, calomel need not be given, and these at once commenced with. The most common worm medicines are *spt. turpentine*, *worm-seed*, or *Jerusalem oak*, *pinkroot*, the bark of the root of the *China-tree*, the bark of the *pomegranate root*, *male fern*,

*walnut rind, wormwood, garlic, tansy, rue, cowage, powder of tin or zinc, copperas, common salt, bitters, &c.* The size of a dose of any of these articles will, of course, depend on the age and condition of the patient, and should usually be repeated two or three times a day.

For a child some five or seven years of age, the following answers very well :—

R. Spt. turpentine                      three teaspoonfuls ;  
Sweet oil or castor oil three tablespoonfuls.

Mix, and shake well just before using ; dose, a teaspoonful, taken alone, or mixed with sugar or mucilage of some kind, two or three times a day. When the subject is older or younger, the dose should be increased or diminished accordingly. The addition of some twenty grains of calomel to this mixture may add to its anthelmintic virtues ; when the calomel is added, its use should not be continued longer than two or three days ; but, if necessary, it may be resumed at a subsequent period.

Usually, after giving some of the anthelmintics which do not purge for a day or two, it will be advisable, if worms are not discharged, to give a cathartic. The vegetable anthelmintics noticed above (except the cowage, which should be taken in syrup), may be given in decoction or infusion, or otherwise. The seeds of the Jerusalem oak are frequently given in sweet milk. When children are wormy, a very convenient way to remove these parasites is to incorporate the seeds of the Jerusalem oak with candy. This may be easily done, when candy is made of molasses or sugar, in the usual way ; just before the syrup becomes cool and hard, freely stir in the seeds ; and when the candy is prepared, the children should be allowed to use it somewhat freely, which they will probably most commonly willingly and cheer-

fully do. The other anthelmintics may be finely pulverized, and given in the same way.

The thread-worm (*ascarides*) commonly inhabits the rectum ; and for their removal, besides the means mentioned above, injections should be resorted to daily, of solutions of common salt, or spirit of turpentine and sweet oil or castor oil, or some bitter decoction ; as of wormwood, aloes, rue, &c., sufficiently diluted with water.

In cases of tape-worm, occurring in adults, large doses of spirit of turpentine are highly spoken of by authors. It may be given in doses of from one to two or three teaspoonfuls, with a tablespoonful of castor oil, and some sugar or thick solution of gum Arabic, slippery elm, flour, or the like, and taken once or twice a day. For further particulars, see works which treat more at length on this subject.

As there is generally greater or less debility after the worms have been removed, or even during their removal, tonics are necessary ; and as, in a large majority of cases, there is a greater or less degree of anemia—the subject presenting a pallid appearance, some of the preparations of iron are indicated, which also act well as tonics. For this purpose, for children some five or six years of age (and for younger or older in proportion), a grain of cop-peras, or three or four grains of carbonate of iron, should be given in syrup or molasses, two or three times a day, till the health of the patient is restored. Some of the vegetable bitters may also be used ; as dogwood, poplar, gentian, quassia, &c. Generous diet, fresh air, and other hygienic measures should be attended to.

The worms that are generally met with in the alimentary canal, are the *round-worm* (*Ascaris lumbricoides*), *thread-worm* (*Ascaris vermicularis*), *long thread-worm* (*Tricocephalus dispar*), *long tape-worm* (*Tænia solium*), *broad tape-worm* (*Tænia lata*).

## V.

## CATARRH, OR A COLD: COMMONLY CALLED "A BAD COLD."

As the real nature of this affection is so little understood by most persons, though it is of common occurrence, and as it is often so variously and improperly treated by them, a brief notice of it here may not be without profit to many. It should be borne in mind that, though it is produced in cold and wet or variable weather, or by sudden exposure to a cool current of air, after being in a crowded ball-room or other warm place, the *pathological condition is a superficial inflammation* of a greater or less portion of the mucous membrane, or mucous follicles of the air passages, more particularly of the windpipe, bronchi, and nasal cavities, with, in some cases, a febrile condition of the system.

The symptoms are cough and sneezing, with increased secretion of mucus from the air passages; a feeling of lassitude or dullness; probably watery eyes, a greater or less degree of fever and thirst, and commonly a fullness of the head, which is said by the patient to be "stopped up."

In some severe attacks, that are neglected or improperly treated, it becomes *chronic* and troublesome; and, it has been said, may run into consumption.

TREATMENT.—*Bad colds* are often so slight as to get well without the exhibition of medicines. At the onset, in violent attacks in young plethoric persons, in which

the febrile excitement is considerable, with pain in the head, a moderate quantity of blood may be taken from the arm, though this is very rarely if ever necessary, in the South. An emetic and cathartic, or a few doses of some cathartic, are usually sufficient. I have generally found a moderate dose of Epsom salts (three or four teaspoonsful) taken at bed-time, for several nights in succession, suffice to cure a cold. Bathing the feet and legs in hot water for about twenty minutes, just before going to bed, and immediately wiping them dry, may be of service; so also may drinking a little warm sage tea, after getting in bed, so as to favor slight perspiration.

If the cough is troublesome, the following mixture may be of much service:—

|     |                       |                  |
|-----|-----------------------|------------------|
| R.  | Syrup of squills      | two fluidounces; |
|     | Tartar emetic         | six grains;      |
| Or, | { Ipecacuanha, or,    | two scruples;    |
|     | { Tincture of lobelia | one fluidounce;  |
|     | Sulphate of morphine  | five grains;     |
|     | Water                 | one fluidounce.  |

Dissolve the tartar emetic and morphine in the water (if the water is used instead of the tincture of lobelia; if the latter is used, dissolve these ingredients in it), then mix it with the syrup of squills, and shake well before using: dose, a teaspoonful, three or four times a day, so as scarcely to nauseate the stomach. If the cough is troublesome at night, a dose should be taken to allay it; or if there is little or no febrile excitement, a teaspoonful or two of paregoric, or thirty or forty drops of laudanum, or a quarter or third of a grain of morphine, may be used for the same purpose. Five grains of morphine dissolved in an ounce of tincture of lobelia, and this added to two fluidounces of Coxe's hive syrup, and the mixture shaken and taken in doses of a teaspoonful three or four times a day, may be used instead of the above formula or mix-

ture. In cases that are somewhat protracted, the addition of either of the above mixtures to an equal quantity of sweet spirit of nitre, and taken in doses of from one to two teaspoonfuls, three times a day, has appeared to be of much service. Other articles, which common sense may suggest, guided by the nature of the disease, may also be of use.

If there is febrile excitement, the *diet* should be light and cooling; otherwise, little or no alteration from the usual mode of living is necessary.

If the affection becomes *chronic*, the treatment for *chronic bronchitis* will be proper; to which the reader is referred.

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## VI.

### EPHEMERAL FEVER.

ON account of the susceptibility of young children to be morbidly affected by slight causes, which may or may not be appreciable, a febrile condition is sometimes induced in them, which may last for several hours and then pass off, and it may or may not return the next ensuing day, in mild cases. In severe cases, the fever will probably last a much longer time, perhaps for ten or twelve hours or more. In many of these the brain becomes considerably affected, even to coma or convulsions, or jerking of the limbs. The pulse is greatly increased in frequency, and to some extent in fullness and hardness. The fever is most likely to be at its acme in the afternoon; and will probably subside during the night, especially if the proper remedies have been given; and it may return again the ensuing day. The fever is generally, if not always,

preceded by coldness of the extremities, which may even present a purplish or bluish appearance, as in the cold stage of an intermittent. When the fever is at its highest the skin is hot and dry, and it is at this time that the brain is most affected. This disease is usually most severe, according to my observation, in florid, healthy looking children.

**TREATMENT.**—A solution of tartar emetic, lobelia, or ipecac. should be given, so as to nauseate the stomach for a time, and then produce free vomiting. In florid, sanguine looking children, tartar emetic is superior to either of the other articles. After free puking has been induced, the system should be kept under its slightly nauseating influence till the fever is subdued. About an hour after the vomiting, two or three grains of calomel should be given, and in severe cases it ought to be repeated once or twice, with intervals of twelve hours. The bowels should be moved rather freely at the commencement, which the tartar emetic and calomel are almost sure to do. During the period of high febrile excitement, the child's head should especially be kept cool, with cold water, in cases in which the brain is likely to suffer, and, indeed, the whole body may be sponged with cool water, provided it can be done without fretting the child much.

After the fever has been subdued, to prevent a return of it, two or three grains of quinine should be given every four or five hours. The diet should be light for a day or two.

## VII.

## FOR THE ITCH. (SCABIES.)

MANY articles have been used for the cure of the *itch*, but perhaps a mixture of pulverized sulphur, lard, and soap, is about as good as any. This mixture should be rubbed on at night, on going to bed, and persevered in till a cure is effected. *Red precipitate ointment*, made by mixing the red precipitate with mutton suet, is also a good remedy, but the sulphur ointment is preferable.

## GLOSSARY.

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### A.

- ABNORMAL.** Morbid, or a deviation from health.
- ACUPUNCTURE.** To puncture parts with a fine needle.
- AD INFINITUM.** A Latin phrase, which means—to infinity, or without limit.
- ADJUVANT.** A medicine which assists another.
- ALBUMEN.** The white of an egg consists almost entirely of albumen. It is also one of the ingredients of animal and vegetable substances—is found in the serum of the blood, chyle, &c.
- ALBUMINURIA.** A morbid condition of the system, in many cases attended with disease of the kidneys, characterized by the presence of *albumen* in the *urine*.
- ALGIDE.** Icy coldness; applied to one form of congestive chill.
- ALVINE.** Pertaining to the bowels or abdomen; *alvine* discharges, means the discharges from the bowels, as from the operation of a cathartic, or in diarrhœa.
- AMENORRHŒA.** Absence of the menses or catamenia, in females who have arrived at the age of puberty, and previous to the proper time for their cessation in advanced life.
- ANASARCA.** Dropsy of the cellular membrane, or general dropsy.
- ANEMIA.** Privation of blood; the opposite of plethora, or hyperæmia. *Anemic* persons are pale and enfeebled; and there is a greater or less diminution in the ratio of the red corpuscles of the blood.
- ANEMIC.** Pertaining to anemia.
- ANIMALCULE.** An extremely small animal, which may be seen by means of the microscope.
- ANTIPHLOGISTIC.** Opposed to inflammation; generally applied to lowering treatment; as bleeding, purging, very light diet, &c.—the opposite of a stimulating or tonic treatment.
- ANUS.** The fundament; the circular opening at the lower extremity of the rectum, through which the excrements escape.
- APLASTIC.** That which is not disposed to, or is incapable of becoming organized or vitalized.
- APYREXIA.** Absence of fever, commonly applied to the period between the paroxysms of intermittent fever.

- ARACHNITIS.** Inflammation of the *arachnoid membrane*. Synonymous with phrensy, or brain fever.
- ARACHNOID MEMBRANE.** A thin, serous membrane, resembling a spider-web; situate between the pia mater and dura mater; these latter membranes are situated in the interior of the skull; the dura mater lining its internal cavity, the pia mater enveloping the brain, and both extending into the spinal canal, enveloping the spinal marrow.
- ARTICULO MORTIS.** Dying.
- ASCITES.** Dropsy of the belly.
- ASSIMILATION.** To render similar. The act by which living bodies appropriate and transform into their own substance matters with which they may be placed in contact. In man, assimilation is a function of nutrition. (*Dunghlison.*)
- ASODES.** Disgust, nausea. A variety of fever attended with anxiety, nausea, &c.
- ATAXIA or ATAXIC.** Applied to the prostrated condition of the system in cases of protracted fever, in which the patient is very feeble and nervous.
- AUSCULTATION.** The act of listening. Used as a means of diagnosis in diseases of the lungs, heart, &c., by appreciating the different abnormal sounds, or their variation from natural or healthy ones.

## B.

- BILIARY.** Pertaining to bile.
- BILIOUS.** Pertaining to bile, or that which is produced by, or contains bile. A term made use of by some, applied to slight derangement of health which they suppose to depend on torpidity of the liver, a deficiency of bile, or a superabundance of secretion of bile, or biliary derangement; also applied in the same way to diseases, and to certain constitutions in which there is supposed to be a superabundance of the biliary secretion; as in the *bilious temperament*.
- BLAUD'S FERRUGINOUS PILLS.** Take of *Gum Tragacanth*, in powder, six grains; *water*, one drachm. Macerate in a glass or porcelain mortar, until a thick mucilage is formed; and if it be desired to prevent the formation of peroxide of iron, and to make the pills similar to those of Vallet, substitute a drachm of powdered sugar for the mucilage. Add afterwards of *sulphate of iron*, in powder, half an ounce. Beat well until the mixture is homogeneous, and add *subcarbonate of potass*, half an ounce. Beat until the mass becomes of a deep green color, and of a soft consistence. Divide into 48 pills. Dose, one a day; gradually increasing to two, and afterwards to three. (*Dunghlison.*)
- BLOOD, Composition of, in health.** In 1000 parts, fibrin, 3; red corpuscles or globules, 127; water, about 790; solid matter of the serum, 80. According to M. Lecanu, the blood is composed in 1000 parts of water, 785.590; albumen, 69.415; fibrin, 3.565; coloring matter,

119.626; crystallizable fatty matter, 4.300; oily matter, 2.270; extractive matter soluble in alcohol and water, 1.920; albumen combined with soda, 2.010; chlorides of sodium and potassium, alkaline phosphates, sulphates, and subcarbonates, 7.304; subcarbonate of lime and magnesia, phosphate of lime, magnesia and iron, peroxide of iron, 1.414; loss, 2.586.

**BLOOD-GLOBULES.** *Globules of the blood, Blood-corpuscles, Blood-disks or Blood-vesicles*, are small, circular bodies, which constitute a portion of the blood of all animals. "The globules of blood are circular in the mammalia, and elliptical in birds and cold-blooded animals. They are, also, flat in all animals, and composed of a central nucleus enclosed in a membranous sac." (*Dunghison.*)

**BORBORYGMUS.** A dull or rumbling noise in the bowels, produced by an accumulation of gas or wind.

**BOUGIE.** A round, flexible instrument, of different sizes, made of metal, gum elastic, &c.

**BRONCHIA.** The two tubes, with their branches or ramifications, which commence at the lower portion or bifurcation of the windpipe.

**BRONCHIAL-RESPIRATION or RESPIRATORY MURMUR.** The noise heard during inspiration and expiration, especially the former. It is produced by the passage of the air through the bronchial tubes, and into the air cells. It has also been called *murmur of the expansion of the lungs*; and, when distinctly vesicular, *respiration of the cells*, or *vesicular respiration*. Vesicular respiration is, of course, absent when the cells of the lungs have been obliterated from any cause.

At times, it is rude during inspiration or expiration, or both—the *Respiration rude*, or *R. râpense* of the French. At others, there is a *blowing* sound (French, *Souffle, Respiration soufflante*), as if some one were blowing into the auscultator's ear through a tube. This is heard in the healthy state over the larynx, trachea, and about the bifurcation of the bronchia; but when it proceeds from the lungs it denotes disease.

The respiration perceived over the trachea and bronchia in health, is called *tracheal* or *bronchial*, or *tubal*, according to the situation in which it is heard. (*Dunghison.*)

**BRONCHITIS.** Inflammation of the lining membrane of the bronchia.

**BRONCHOPHONY, or RESONANCE.** A thrilling of the voice more loud than natural; or its existence in a part where it is not heard in health, as detected by auscultation. A thickened and hardened state of the lungs, caused either by a mass of crude tubercles, or by inflammation, is generally considered to produce this phenomenon, by rendering the lung a better conductor of the murmur of the voice in the bronchi.—*Ibid.*

**BRUIT, Sound.** A French term, applied to various sounds heard on percussion and auscultation.

**BRUIT DE DIABLE.** Noise resembling that made by the diable, or humming-top. *Venous hum.* A high degree of *bruit de soufflet*, heard on auscultating the arteries. It denotes an impoverished state of the blood. (*Dunglison.*)

**BRUIT DE SCIE,** or "saw sound."

**BRUIT DE SOUFFLET.** *Bruit de Souffle*, "bellows sound," "blowing sound." A sound like that of a bellows, heard occasionally by the ear applied to the chest during the contraction of the ventricles, auricles, or large arteries. It co-exists with affections of the heart; but is heard, also, without any disease in that organ, whenever, indeed, an artery is compressed.—*Id.*

## C.

**CACHECTIC.** Pertaining to, or one who has *cachexia*.

**CACHEXIA.** A bad habit or condition of the system, in which it is depraved, debilitated, and in which the *red corpuscles* are more or less below the natural standard, 127; as in *chlorosis*, *anemia*, *hydropolyemia*, *dropsy*, *scrofula*, *consumption*, &c., which see. *Cachectic* persons present a *pale*, *tallowish*, or *exsanguious appearance*.

**CACOPLASTIC.** "I form bad." That which is scarcely, or only in a low degree, susceptible of organization.

**CÆTERIS PARIBUS.** All other things being equal.

**CAPILLARY.** From *capillus*. A "hair." Small, like a hair.

**CAPILLARY VESSELS.** The extremely small vessels at the ends of the arteries and veins, which connect, or form a medium of communication between these latter, through which the blood passes from the former to the latter. In the capillary system, secretion and nutrition are performed; it is also the seat of inflammatory and other diseases.

**CAPSICUM.** Cayenne pepper.

**CAPUT-CÆCUM,** or *Cæcum Caput coli*. The *blind gut*; that portion of the bowels situated between the lower end of the ileum, or small gut, and the commencement of the colon, or large gut. Its length is about three or four inches. It is situated in the right iliac fossa, between the lower central portion of the abdomen and the right hip. The *appendix vermiformis cæci* is attached to it.

**CARDIAC.** Appertaining to the heart, or upper orifice of the stomach.

**CARDITIS.** Inflammation of the fleshy substance of the heart.

**CAROTIDS.** The large arteries or blood-vessels of the neck, which convey blood to the head; their pulsations may be felt on the right and left of the windpipe, or larynx.

**CATAMENIA.** The menses, monthly flow of females.

**CATAMENIAL.** Pertaining to the menses.

**CATARRHUS VESICÆ.** *Cystorrhœa*, *Cystirrhœa*. An affection of the lining membrane of the bladder, which gives rise to a discharge of mucus

from it, which passes out with the urine; commonly producing *dysuria*, pain, with a sensation of heat in some part of the urethra, and difficulty in passing the urine.

**CAVA, VENA.** The two great veins of the body, which meet at the right auricle of the heart. The *inferior* one arises from the union of the two *primary iliacs*, opposite and in front of the fourth or fifth lumbar vertebra, ascends along in front of the spine, in its course receiving several veins, and opens, as above stated, at the posterior and inferior part of the right auricle of the heart. The *superior* one is formed by the union of the *subclavian veins*, and, like the inferior, after receiving several other smaller veins, terminates at the upper part of the right auricle of the heart.

**CAVERNOUS RESPIRATION.** When a cavity exists in the lungs, and one or more ramifications of the bronchia terminate in it, a loud tubal noise is emitted, provided the cavity be not filled with fluid, which is called *cavernous respiration*. In this condition, the cough is *cavernous* likewise. When the capacity of the cavern is very great, the sound of respiration is like that produced by blowing into a decanter, with the mouth at a little distance from the neck. This kind of cavernous respiration has been called *amphoric*, from *amphora*, "a flask." (*Dunglison*.)

**CEPHALALGIA.** Headache, or pain in the head.

**CEPHALITIS.** *Phrenitis*, inflammation of the brain or its membranes, the latter being sometimes called *Meningitis*.

**CEREBRAL.** Appertaining to, or similar to the brain.

**CEREBRO-SPINAL AXIS,** includes the brain and spinal marrow. The author has occasionally used it to signify the medulla oblongata, or base of the brain, and upper portion of the spinal marrow; as when treating of typhoid pneumonia, or spasmodic croup.

**CHLOROSIS.** A disease characterized by a pale appearance, debility, &c., which affects young females; and which prevents, or otherwise disturbs the regular and healthful appearance of the menses. (See *Anemia*.)

**CHOLERIC.** Pertaining to cholera morbus, or to the bile.

**CHOLESTERINE.** An insipid, inodorous substance found in the bile.

**CLAVICLE.** The *collar-bone*, one end of which is in contact with the upper end of the *sternum*, or *breast bone*; the other with the acromion process of the *scapula*, or *shoulder-blade*.

**COLLAPSE.** Great prostration of strength, which is more likely to occur in the latter stage of severe or malignant diseases, as in the severer forms of remittent fever; but in some other diseases the stage of *collapse* may come on early, as in the *cold stage* of a severe congestive chill, or cholera.

**COLLIQUATIVE.** An adjective applied to copious discharges which produce great exhaustion or debility, as copious liquid evacuations from the bowels, or copious sweating, &c.

- COLON.** The large bowel, which extends from the cæcum to the rectum.
- COMA.** A profound or deep sleep, from which it is more or less difficult to rouse the patient; but less so than in *lethargy*.
- CORRIGENT.** A medicine given to prevent any unpleasant or unfavorable effect of the principal medicinal agent, as compound tincture of cardamoms, cinnamon, paregorie, or the like, given with some cathartics to prevent them from griping.
- COSTALIS.** Pertaining to the ribs.
- CREPITANT.** *Crepitating.* Crackling.
- CREPITANT RALE.** *Crepitant Rattle*, heard during respiration, in severe pneumonia, and in oedema of the lung; so termed on account of the analogy between the sound and that occasioned by pressing a healthy lung between the fingers. (*Dunghison.*)
- CRASSAMENTUM.** The clot of the blood.
- CRUOR.** The clot of the blood, or *crassamentum*.
- CYSTITIS.** Inflammation of the bladder. *Biliary cystitis* is inflammation of the gall-bladder.

## D.

- DECARBONIZATION.** *Hæmatosis, Arterialization of the blood, Atmospherization of the blood.* Venous blood contains an amount of carbonic acid, &c., which, if it did not escape from the system, would soon accumulate to such an extent as to be deleterious or poisonous; hence, when it reaches the lungs, this superabundance escapes by means of respiration; oxygen, from the air breathed, combines with the venous blood—with which lymph and chyle are mixed in the lungs—rendering it more florid, and better suited to nourish the system, in which condition it is called *arterial blood*.
- DECUBITUS.** Lying down in a horizontal posture.
- DIAPYCNOSIS.** Exudation of blood through a membrane, or the skin.
- DIAPHORESIS.** Perspiration.
- DIATHESIS.** This word is applied to certain conditions or affections of the system, which dispose it to become affected with certain diseases rather than others. Hence, we say the *scrofulous diathesis, anemic or chlorotic diathesis, gouty diathesis, cancerous diathesis, &c.*
- DORSAL.** Relating to the back, or one of its parts. The *dorsal vertebræ* are the twelve bones of the back between the lower portion of the neck and the lumbar vertebræ, the latter consisting of five bones.
- DORSO-INTERCOSTAL.** Relating to the dorsal region and between the ribs.
- DOUCHE.** Dashing or pouring water on the body, or any part of it.
- DUODENUM.** A name given to about twelve fingers' breadth of the intestine, extending from the lower orifice of the stomach to that portion of small intestine called the *jejunum*.
- DYSPNŒA.** Difficult breathing.
- DYSMENORRŒA.** Painful menstruation.
- DYSURIA.** Difficulty of passing the urine.

## E.

- ELLIPTICAL PLATES.** *Peyer's glands, Agminated glands.* Small glands or follicles, situate beneath the villous coat of the intestines. They are clustered together, having a honeycomb appearance, and are extremely numerous. They occur most numerous in the lower portion of the ileum. (*Dunghison.*)
- EMBONPOINT.** "In good point, or habit." The state or condition of the body when it presents a *fleshy*, plump, or fat appearance.
- EMESIS.** *Vomiting, puking.*
- EMPHYSEMA.** *Wind-dropsy.* Applied to the condition of a part in which air has escaped into the cellular substance.
- EMPHYSEMA OF THE LUNGS.** An infiltration of air into the cellular texture of the lungs (*interlobular emphysema*), or an excessive dilatation of the air cells (*vesicular emphysema*).
- EMOLLIENTS.** Substances or preparations which are applied to relax and soothe parts that are inflamed, or too tense. They consist of cataplasms or poultices, oils, fomentations, &c.
- EMULSION.** A milky-white, opaque preparation, made by mixing oil, mucilage, and water.
- ENCEPHALOID.** A name given to certain cancerous or scirrhus tumors, in which their substance resembles, in appearance, the brain.
- ENDERMIC.** The application or method of applying medicines to the skin, especially after the cuticle has been removed.
- ENDEMICO-EPIDEMIC.** A compound word, applied to *endemic* diseases when they manifest an epidemic character.
- ENCEINTE.** One with child. Pregnant.
- ENTERITIS.** Inflammation of the intestines.
- ENTOMOLOGY.** The science or natural history and description of insects.
- EPIALOS.** A name given by the ancients to fever, when the hot stage was mingled with irregular chills. Also, the cold stage of fever. (*Dunghison.*)
- EPIGASTRIC REGION, Scrobiculus cordis.** The *pit* of the stomach, the superior central region of the belly.
- EPIGASTRIUM.** The epigastric region. *Præcordia.*
- EPISTAXIS.** Bleeding at the nose.
- EPITHELIAL.** Pertaining to the *epithelium*, a thin layer of epidermis, skin or membrane, which covers the interior or florid portion of the lips, the nipple, mucous membranes, &c.
- EXACERBATION.** An increase in the violence of a disease; the hot stage of a fever. A paroxysm.

## F.

- FÆCAL, Fecal.** Relating to the *fæces*.
- FÆCES, Feces.** The excrements, the evacuations from the bowels.

**FEMORAL.** Pertaining to the thigh.

**FETOR.** A bad smell. Stench.

**FIBRIN.** An immediate, solid, white, inodorous, insipid principle, which constitutes a portion of the blood and chyle, and forms the chief part of the flesh of red-blooded animals.

**FOLLICLE, *Crypta.*** A *crypt* or *follicle* is a small, roundish, hollow body, situate in the substance of the skin or mucous membranes, and constantly pouring the fluid which it secretes on their surfaces.

**FOMITES.** A word applied to substances which are supposed to retain and convey the poison which propagates contagious diseases; as woollen or cotton goods, &c.

**FUNDUS.** The base of any organ which ends in a neck, or has an external aperture; as the fundus or upper part of the womb or bladder.

**FUNGUS, plural, *Fungi.*** A term applied by botanists to a large natural order of plants of a peculiar organization and manner of growth, comprehending mushrooms, toadstools, the microscopic plants which form mold, mildew, smut, &c. The word is also applied to excrescences on plants. Also *proud flesh*. Any morbid excrescence, whether in wounds, or arising spontaneously.

## G.

**GASTRIC.** Pertaining to the stomach.

**GASTRITIS.** Inflammation of the stomach.

**GASTRO-ENTERITIS.** Inflammation of the stomach and small intestine, or of the stomach and bowels.

**GLANDS OF BRUNNER, *Solitary Glands, Solitary Follicles.*** Muciparous follicles of a small size, seated between the mucous and muscular coats of the stomach, along the two curvatures of that organ, and in the small intestines, especially the duodenum. The solitary intestinal follicles are usually known at the present day, as the glands of Brunner, although Brunner restricted the latter term to the glands of the duodenum. (*Dunglison.*)

## H.

**HÆMATEMESIS.** Vomiting of blood.

**HÆMATOSIS.** (See *Decarbonization.*)

**HEMICRANIA.** Pain confined to one-half of the head.

**HÆMOPTYSIS.** Spitting of blood (which see, in the work).

**HEMORRHAGE.** Bleeding. Any discharge of blood from vessels destined to carry it, with or without rupture of their coats; as bleeding from the nose, lungs, &c.

**HEPATALGIA.** Nervous pain of the liver; neuralgia of the liver.

**HEPATIC.** Pertaining to, or resembling the liver.

**HEPATIZATION.** Conversion into a liver-like substance. The lungs are

said to be *hepatized* when they are engorged with effused blood, &c., are impervious to air, and present the appearance of the liver, as sometimes occurs in pneumonia.

**HUMORISM, Humeral Pathology.** An ancient theory which referred all diseases to the morbid condition of the *humors* or *fluid* parts of the body, as the blood, lymph, &c.

**HYDROCELE.** Dropsy of the testicle, or scrotum.

**HYDROPERICARDITIS, Hydropericardium.** Dropsy of the *pericardium*, a membranous sac which envelops the heart.

**HYDROTHORAX.** Dropsy of the chest.

**HYGIENE. Health.** Pertaining to the preservation of health.

**HYPERÆMIA.** Preternatural fullness of blood in a part, or preternatural accumulation of blood in the capillary vessels.

**HYPERTROPHY.** Morbid enlargement of a part with increased substance, as enlargement of the heart, &c.

**HYPOCHONDRIAC REGIONS** are two in number, situated to the right and left of the pit of the stomach, beneath the lateral and front parts of the chest.

## I

**ILEON, Ileum, Ilium.** The longest portion of the small intestine, which extends from the jejunum to the cæcum.

**ILIAC.** Pertaining to, or connected with, the flanks.

**ILIAC FOSSÆ.** The hollow, or cavity, formed by the depression on the internal surface of the hip-bone (ilium). This term is also applied to a depression on the external surface of this bone.

**ILIUM, Ilium, Ilium, Ileum.** The hip or haunch bone.

**INGESTA.** Substances taken into the stomach, as food, &c.

**INNERVATION.** The nervous influence, or functions of the nervous system, which are necessary for the maintenance of life and the functions of the various organs.

**INTERSCAPULAR.** Between the scapula, or shoulder-blades.

**ISOMERIC.** An epithet applied to different bodies, which agree in composition, but differ in properties. This condition is termed *Isomerism*. (*Dunghlison*.)

**ISOMORPHOUS.** An epithet applied to different bodies, which have the same crystalline form. The condition is called *Isomorphism*.—*Ibid*.

**ISOPATHIA.** Parallelism of diseases. The disposition of diseases to anastomose with each other, or to wear each other's livery.

## J.

**JACTITATION, Jactation.** Tossing about. Extreme anxiety; excessive restlessness.

**JEJUNUM.** That portion of the small intestine between the duodenum and ileon.

## L.

**LARYNGITIS.** Inflammation of the larynx.

**LARYNGOTOMY.** A surgical operation, which consists in cutting an opening into the cavity of the larynx, for the purpose of extracting some foreign body, or to remedy an obstruction of the glottis. *Tracheotomy.*

**LARYNX.** A cartilaginous cavity, situated at the upper and front part of the neck, at the upper end of the windpipe, with which it communicates. It modulates the voice in speaking and singing.

**LATERITIOUS.** Having the appearance of brick-dust.

**LEUCOPHLEGMATIC.** Relating to a pale, anemic, or dropsical habit.

**LEUCORRHEA, Whites.** A disease in females, attended with a more or less abundant discharge of a white, yellowish, or greenish mucus, from the membrane lining the genital organs; as that of the vagina and womb.

## M.

**MALARIA.** Miasm.

**MALASE.** An indescribable feeling of being unwell; a feeling of indisposition.

**MAMMA.** The female breast.

**MAMMELONATION, Mammillated.** Small mammiform projections.

**MASTOID.** Having the form of a nipple. The *mastoid process* is situated behind and below the ear, at the inferior and posterior part of the temporal bone.

**MATERIA MEDICA.** That part of medical science which treats of the articles or substances used in the practice of medicine, their action on the animal economy, and mode of administration. Also, the materials of medicine.

**MEDULLA OBLONGATA.** The medullary, or nervous substance, that lies within the cranium, on the basilar process of the occipital bone, being at the base of the brain, and connecting it with the spinal marrow.

**MELANOSIS. Black tubercle, Black cancer.** An organic affection, in which the tissue of the parts is converted into black, hard, homogeneous substance, near which ulcers or cavities form—owing to the softening, either of this substance itself, or of some other morbid tissue—of tubercles, especially.

**MENORRHAGIA.** Profuse menstruation. Too great a flow of the menses. Sometimes used synonymously with uterine hemorrhage or *metrorrhagia*.

**MESENTERIC GLANDS** are the lymphatic ganglions of the mesentery. Through them the chyloferous vessels pass to the thoracic duct. When they are diseased, nutrition is interfered with, and marasmus, or a wasting away of the body, is produced.

**MESENTERY.** A membrane in the cavity of the abdomen, attached to the

lumbar vertebræ posteriorly, and to the intestines anteriorly. It is formed of a duplicature of the peritoneum, and contains adipose matter, lacteals, mesenteric glands, lymphatics, and mesenteric arteries, veins, and nerves. Its use is to retain the intestines and their appendages in a proper position. (*Hooper.*)

**METASTASIS.** A mutation, translation, or removal of a disease or morbid action from one part to another.

**METEORISM, Tympanites.** A swelling of the abdomen, caused by accumulation of air in the intestinal tube, or in the peritoneum (cavity of the abdomen).

**METRITIS.** Inflammation of the womb.

**MIASM.** A hypothetical poison, which is supposed to be generated in marshy districts, and considered to be the cause of what are called malarious diseases. This term is also applied to poisonous emanations from the bodies of the sick, or from animal and vegetable substances, or from the earth.

**MIASMATA.** (See *Miasm.*)

**MIASMATIC.** Pertaining to miasm.

**MOXA.** A substance that is used for burning the skin; a powerful means of counter-irritation.

**MUCOUS MEMBRANES** are the lining membranes of the cavities which have an external outlet, as of the bowels, air-passages, &c.

**MURMUR, RESPIRATORY.** (See *Bronchial Respiration.*)

## N.

**NARCOSIS, Narcotism, Stupor, Sleep.** The condition of the system when under the stupefying influence of opium or other narcotics.

**NECROSCOPY.** *Dissection, Sectio-cadaveris, Post-mortem examination.* Attentive examination of the body after death.

**NERVOUS.** Pertaining to the nerves or nervous system. Also weak, irritable.

**NEURALGIA, Nervous pain.** Applied to nervous diseases. The *neuroses*.

**NOSLOGY.** A name given to that part of medicine whose object is the classification of diseases. Also, Pathology. (*Dunghison.*)

**NUCHA.** The *nape* of the neck.

## O.

**OMENTUM, Epiploon.** The *caul*.

**ORGAN.** Part of an organized being, destined to exercise some particular function; as, for instance, the stomach, liver, kidneys, lungs, &c.

**ORGANIC NERVOUS SYSTEM, Ganglionic Nervous System.** That part of the nervous system which presides over nutrition and secretion. It is, however, very intimately connected with the *spinal* and *cerebral* divisions of the nervous system.

ORTHOPNŒA. Impracticability of breathing, except in the erect posture.  
Any difficulty of breathing.

OVARIOTOMY. The operation of cutting out an ovary, the *testicle* or *pride* of the female.

## P.

PAPULAR. Relating to *papulae*, *pimples*; an eruption on the skin, consisting of small, acuminate elevations of the cuticle, with an inflamed base; very seldom containing a fluid, or suppurating, and commonly terminating in scurf.

PARENCHYMA. The texture of glandular and other organs, composed of agglomerated globules united by cellular tissue, and tearing with more or less facility. Such is the texture of the liver, kidneys, &c. (*Dunghlison.*)

PARIETES, Plural of *Paries*, a wall. A name given to parts which form the enclosures—the limits of the different cavities of the body. *Ibid.*

PARI PASSU. With equal pace, or progress. Step by step.

PATHOGNOMONIC. A symptom, or symptoms, characteristic of a disease; the symptoms by which a disease is known with certainty.

PATHOLOGY. The morbid condition which constitutes disease. A discourse or treatise on a disease, or diseases in general.

PECTORILOQUY, *Pectoriloquism*, *Cavernous voice*. Speech or voice coming from the chest. Laennec has designated, by this name, the phenomenon often presented by consumptive individuals, when their chests are examined with the stethoscope. The voice seems to issue *directly* from the chest, and to pass through the central canal of the cylinder—a phenomenon owing to the voice resounding in the anfractuous cavities, produced in the lungs by the suppuration or breaking down of tubercles, which constitute *abscesses* or *ulcers of the lungs*. (*Dunghlison.*)

PER ANUM. By way of, or through the anus.

PERCUSSION. The act of striking the external walls of the chest, or other parts, so as to elicit or produce sound, which indicates the diseased or healthy condition of the parts beneath; as percussing or striking the external walls of the chest, in order to ascertain the healthy or diseased condition of the lungs, heart, &c.

PERICARDIAL SAC. The *pericardium*.

PERICARDITIS. Inflammation of the pericardium.

PERICARDIUM. A membranous sac which envelops the heart.

PERITONEUM. The serous membrane which lines the cavity of the abdomen, and is reflected over the bowels, &c.

PERITONITIS. Inflammation of the *peritoneum*.

PERITYPHLITIS. Inflammation of the cellular substance surrounding the cæcum.

PETECHIÆ. Small spots on the skin, resembling flea-bites.

**PHARYNX, *Fauces*.** A symmetrical canal, on the median line, irregularly funnel-shaped, situate between the base of the cranium and the œsophagus, in front of the cervical portion of the spinal column. It is very narrow above; but dilates in the middle, and again contracts below, at its junction with the œsophagus. Into the anterior walls of the pharynx open, successively, from above to below, the posterior orifices of the nasal fossæ: the Eustachian tubes; the posterior aperture of the mouth, and the top of the larynx. The pharynx gives passage to the air during respiration, and to the food at the time of deglutition.

**PHYSICAL SIGNS.** (See *page 109*.)

**PIA MATER.** A thin, delicate membrane, which covers or envelops the brain and spinal marrow immediately.

**PLEURA.** A serous membrane, one of which lines each side or cavity of the chest. That portion of the *pleura* which is reflected over the lungs is called *Pleura Pulmonalis*; and that which lines the parietes or internal walls of the chest, *Pleura Costalis*.

**PNEUMONIA, *Pneumonitis*.** Inflammation of the lungs; vulgarly called *lung fever*.

**PNEUMOTHORAX.** An accumulation of air in the cavity of the chest, in the cavity formed by the *pleura*.

**POST-MORTEM, after death.** A *post-mortem* examination of a body, is one made after the death of an individual.

**PRECORDIA or PRECORDIAL REGION.** The epigastrium or epigastric region; the *pit* of the stomach. Also, used by some writers for the region of the heart.

**PRODROMIC.** Prodromic symptoms are the first symptoms of a disease; the precursory or premonitory symptoms.

**PROFLUVIA.** Morbid discharges or fluxes; as diarrhoea or dysentery.

**PROGNOSIS.** The judgment or prediction formed in relation to the future progress and termination of a disease.

**PROPHYLACTIC.** That which prevents disease.

**PROPHYLAXIS.** The means of preventing or averting disease.

**PRO RE NATA.** As circumstances or occasion requires.

**PUBIS or PUBIC REGION.** *Pubes*. The region above the external organs of generation, in front of the os pubis, at the lower part of the abdomen, and which is covered with hair in both sexes at the age of puberty.

**PYLORUS.** The orifice at the lower portion of the stomach, through which food passes into the bowels.

**PYREXIA.** Fever.

## Q.

**QUARTAN.** A type of ague, the paroxysm of which recurs every third day, or with intermissions of seventy-two hours.

- QUININISM.** The aggregate effects produced on the brain and nervous system by too much, or the improper exhibition, of quinine.
- QUINTAN.** An intermittent fever, the paroxysms of which return every fifth day; with three intervening days without fever.
- QUOTIDIAN.** A type of ague and fever, the paroxysm of which returns every day, or every twenty-four hours.

## R.

**RALE.** Rattle.

**RATTLE.** *Rhonchus*. A term that has been given to different sounds during respiration, caused by the air passing through fluid contained in the bronchi, or areolæ of the pulmonary tissue; which are perceived by auscultation.

Also, noise produced by the air in passing through mucus, of which the lungs are unable to free themselves. This condition is chiefly observed at the approach of death, and is commonly called, "*The Rattles*." (*Dunglison*.)

**RHONCHUS, MUOUS.** *Mucous rattle*. *Subcrepitant rhonchus*. The sound produced by the passage of air through mucus accumulated in the bronchi or trachea, or through softened tubercular matter. This *râle* occurs in catarrh, and in softened tubercle. When carried to a very high degree, it constitutes *gurgling*. (*Ib.*)

**RHONCHUS, SIBILANT.** *Sibilant rattle*, *Râle sibilant*. A slight, though prolonged whistling sound; occurring either at the commencement of inspiration, or of expiration; owing to the presence of mucus, thin and viscid, but not abundant; which obstructs, more or less completely, the smaller bronchial ramifications. It is seated in the small tubes, and occurs in the first stage of bronchitis. (*Ib.*)

**RHONCHUS, SONOROUS.** *Sonorous rattle*. A sound resembling, at times, the snoring of a person asleep; at others, the sound of the bass string of an instrument when rubbed with the finger, and not unfrequently the cooing of a dove. It seems to be caused by a contraction of the bronchial tubes, and is characteristic of chronic catarrh. (*Ib.*)

**RECIPE.** *R.* Take. Placed at the top or commencement of a formula or prescription.

**RECTUM.** That portion of the large bowel situated immediately above the anus, and below the sigmoid flexure of the colon. It is vulgarly called "*The Arse-gut*."

## S.

**SACRUM,** *Os sacrum*. The bone at the back part of the pelvis, below the loins, and on the upper part of which the lower lumbar vertebra rests.

**SANGUINARIA CANADENSIS.** Puccoon, or blood-root.

**SANIOUS,** *Ichorous*. Relating to *ichor* or *sanies*, a thin, acrid, irritating dis-

charge, which comes from the surface of foul ulcers, or those which are not inclined to heal readily.

**SARCOCELE.** A fleshy tumor of the testicle.

**SCAPULA.** The shoulder-blade.

**SCIRRHUS.** A hard or indurated tumor, commonly attended by shooting pains, and considered to be of a cancerous nature.

**SCROFULA.** A species of *anemia*, in which indolent glandular tumors occur, principally about the neck, and in the mesentery, affecting the mesenteric glands, in which latter case it is called *Tabes mesenterica*. The glandular swellings frequently result in ulceration, which heals with difficulty. Scrofula may also terminate in consumption.

**SCROFULOSIS,** *Scrofula, Scrophula.*

**SCROFULOUS.** Relating to, or suffering from scrofula.

**SECTIO CADAVERIS.** (See *Post-mortem*.)

**SEROUS POLYÆMIA,** *Hydro-polyæmia.* Too much water in the blood. Like the other species of anemia, it is attended with a diminution in the amount of the blood-globules.

**SEXTAN.** Applied to an ague which returns every sixth day.

**SIGMOID FLEXURE OF THE COLON.** A crooked portion of the colon, resembling the letter *S*, which is situated in the left lower portion of the abdomen, and communicates with the rectum.

**SINAPISM.** A cataplasm, of which mustard is the basis; commonly made by mixing mustard, flour, and vinegar or water, together.

**SINGULTUS.** *Hiccough.*

**SINUS.** This word is applied to certain cavities, as in the bones of the face and head, in which the interior is more expanded than the entrance. It is also applied to certain *venous canals* into which a number of vessels empty.

**SOLITARY GLANDS.** (See *Glands of Brunner*.)

**SPECULUM.** A hollow instrument, used for the purpose of dilating a cavity, so that the condition of the parts within may be seen; as its introduction into the vagina, to observe a diseased condition of the neck or mouth of the womb.

**SPHACELUS.** The disorganized or dead portion of an ulcer, which separates or sloughs off from the living tissue by means of mortification or gangrene. Also gangrene, mortification, or slough.

**SPHINCTER ANI.** A muscle which surrounds and closes the *anus*, the opening through its centre constituting the latter.

**SPINAL.** Pertaining to the spine; as,

**SPINAL IRRITATION.** An affection of the spinal marrow or nerves; which see described in the work.

**SPLENITIS.** Inflammation of the spleen.

**SPLENOTOMY.** The operation of cutting out the spleen.

**SPORADIC.** Diseases are said to be *sporadic* which occur at any time, and are not epidemic, endemic, or contagious.

**SPORULE,** *Spore.* "I sow." The reproductive body in cryptogamous plants,

which is analogous to the seed of phanerogamous plants. (*Dun-glison*.)

**SPUTA.** Plural of *Sputum*, Spit.

**STERNAL.** Relating or pertaining to the

**STERNUM.** The breast-bone.

**STOMACHIC.** *Stomachal*. A corroborant or medicine which strengthens or gives tone to the stomach.

**STYPTIC.** A medicine possessed of constringent properties, and which is applied locally, to arrest bleeding or too copious discharges. Also, used synonymously with *astringent*.

**SUBSULTUS TENDINUM.** Twitching of the tendons, caused by the involuntary and instantaneous contractions of the muscular fibres, most commonly observed at the wrist, but occurring also elsewhere.

**SUI GENERIS.** This term is applied to anything that is peculiar to itself.

**SYPHILIS.** *Lues venerea*, *Pox*, *French Pox*.

## T.

**TABES MESENTERICA.** *Scrofula mesenterica*, *Mesenteric Disease*. (See *Scrofula*.)

**TANNIN.** *Tannic acid* is an astringent principle contained in oak bark and other vegetable astringents, from which it may be extracted. It is called *Tannin*, from its being the principal agent in the process of *tanning*.

**TARAXACUM.** *Dandelion*.

**TEMPERAMENT.** This term is used to designate the peculiar constitutions of different persons, in consequence of the variety of relations and proportions between the constituent parts of the body; hence, when an individual appears stout, and presents a florid appearance, we say he is of a *Sanguine Temperament*; if he is somewhat pallid and plump, possessing a good degree of embonpoint, his *temperament* is said to be *lymphatic*; if he is still more pallid, we say he, or she, as the case may be, is of a *Phlegmatic* or *Leucophlegmatic* appearance or temperament, in which there is a greater or less degree of *anemia*. The *Bilious Temperament* is applied to those who present a rather dark, lean appearance, and who have dark hair. Those who possess a *Nervous Temperament* are commonly excitable, nervous, quick, and usually have a slender form. In most persons, however, there is a mixture of temperaments; hence, we say *sanguineo-nervous*, *lymphatico-nervous*, *bilio-sanguineous temperament*, &c.

**TENESMUS.** Frequent and painful desires to go to stool, attended with very little or no discharges.

**TERTIAN.** *Tertian ague*. An ague whose paroxysms return every other day, or every 48 hours.

**THORACIC.** Appertaining to the thorax, or chest.

**THORAX.** *Chest, Breast.* The lungs and heart are situated within the thorax.

**TINNITUS AURIUM.** Ringing of the ears.

**TORMINA.** Gripping pains in the bowels, as in dysentery.

**TRACHEA.** The windpipe.

**TRACHEAL.** *Trachealis.* An epithet applied to the respiration as heard through the stethoscope, opposite the trachea, larynx, and root of the bronchia; the air appearing as if sucked in from the cylinder during inspiration, and expelled during expiration. (*Dunglison.*)

**TRACHEITIS.** Inflammation of the lining membrane of the *trachea*. *Cynanche trachealis.* (See *Croup.*)

**TRACHEOTOMY.** (See *Laryngotomy.*)

**TUBERCLE.** (See *page 102.*)

**TUBERCULOSIS.** Tubercular cachexia, as consumption, &c.

**TUBERCULOUS.** *Tubercular.* Relating to tubercular disease.

**TYMPANITES.** (See *Meteorism.*)

**TYPHLITIS.** Inflammation of the *cæcum*.

**TYPHUS GRAVIOR.** A severe form of typhus fever.

## U.

**UTERO-GESTATION.** Pregnancy.

## V.

**VAGINA.** "A sheath." The *vulvo-uterine canal*, which is cylindrical and four or six inches long in the adult; situated between the rectum and bladder, communicating at its external end with the os externum or external organs of generation, in the female, and at the other, at the uterus, the neck of which it embraces. The *male organ* enters this cavity in copulation; and through it the secretions and contents of the womb are permitted to escape externally.

**VALLET'S FERRUGINOUS PILLS.** Pills of Carbonate of Iron. These pills are made as follows: Take of sulphate of iron, *four ounces*; carbonate of soda, *five ounces*; clarified honey, *two ounces and a half*; syrup, boiling water, each, *a sufficient quantity*. Dissolve the sulphate of iron and carbonate of soda, each, in a pint of the water, and to each solution add a fluidounce of syrup; then mix the two solutions in a bottle just large enough to contain them, close it accurately with a stopper, and set it by that the carbonate of iron may subside. Pour off the supernatant liquid, and, having washed the precipitate with warm water, sweetened with syrup in the proportion of a fluidounce of the latter to a pint of the former, until the washings no longer have a saline taste, place it upon a flannel cloth, and express as much of the water as possible; then immediately mix it with the

honey. Lastly, heat the mixture, by means of a water-bath, until it attains a pilular consistence. *U. S. Disp.*

When the above is made into pills, each one should weigh from three to five grains, one of which may be taken three or four times a day. Dr. Bache says, "There can be but little doubt that, in cases in which the alterative effects of iron are called for, Vallet's preparation is superior to any other derived from that metal."

**VENA AZYGOS.** *Azygos vein.* This vein forms a communication between the *Vena cava inferior* and *Vena cava superior*, permitting the blood to pass freely between the two.

**VENA CAVA.** (See *Cava Vena.*)

**VENOUS.** Pertaining to a vein.

**VENTRICLE.** A "*Little Belly.*" A name given to several parts; as,

**VENTRICLES OF THE HEART.** Two cavities in the anterior part of the heart, one on each side, into which the venous blood passes from the *auricles* or *ears* of the heart, and from thence into the arteries, the right ventricle communicating with the *pulmonary artery*; and the left ventricle with the *aorta*, the largest artery or blood-vessel of the body, which distributes blood to nearly all of it.

**VERBA MAGISTRI.** Merely the words of a tutor or teacher.

**VERTEBRÆ.** The bones which, by their union, form the vertebral or spinal column, vulgarly called the *back-bone*. The vertebræ are twenty-four in number; namely, seven in the neck, called the *cervical vertebræ*; the next twelve below are called the *dorsal vertebræ*; and the five lower ones the *lumbar vertebræ*.

**VILLOUS MEMBRANES OR COATS,** are such as are covered with soft papillæ, or *villi*, constituted of blood-vessels, nerves, and absorbents. Chaussier gives the name *simple villous membranes* to the serous membranes; and that of *complicated* or *follicular villous membranes* to the mucous membranes. (*Dunghlison.*)

**VISCERA.** Plural of *Viscus*. The organs contained within the three great cavities of the body—the abdomen, chest, and head; as the entrails, liver, lungs, heart, brain, &c.

**VISCERAL.** Pertaining to the viscera.

**VISCUS.** (See *Viscera.*)

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In preparing the above *Glossary*, I frequently referred to Dunghlison's Medical Dictionary, sometimes adopting his definitions, in part.

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